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THE FLOWERING PLANTS
GRASSES, SEDGES & FERNS
OF
GREAT BRITAIN

PL. 3.

1 WOOD ANEMONE
Anemone nemorosa

2 PASQUE FLOWER
Anemone pulsatilla

3 MOUNTAIN ANEMONE
Anemone apenina

4 YELLOW WOOD ANEMONE
Anemone ranunculoides

5 PHEASANT'S EYE
Adonis autumnalis

Frontispiece.

Pl. 2.

THE FLOWERING PLANTS
GRASSES, SEDGES & FERNS
OF
GREAT BRITAIN

AND THEIR ALLIES

THE CLUB MOSSES, HORSETAILS, &c.

By ANNE PRATT

NEW EDITION
REVISED BY EDWARD STEP, F.L.S.

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ILLUSTRATED WITH
THREE HUNDRED AND FIFTEEN COLOURED PLATES
FIGURING
UPWARDS OF 1500 SPECIES

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VOL. I

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1899

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PREFACE TO 1899 EDITION.

ANNE PRATT'S "Flowering Plants, Grasses and Ferns" has been so long before the public as to have become the standard popular work upon the British Flora. A preface to a new edition may therefore appear to be altogether superfluous; yet the Publishers and the present Editor deem it right to explain in a general way to what extent the revision has affected the work as it left the author's hands.

The normal advance in botanical knowledge made revision necessary, but it was decided that the work should remain Anne Pratt's: therefore the system of classification and, with few exceptions, the names of species have been retained as in previous editions. Many corrections of a minute character have been made, descriptions of a number of species formerly lacking have been added, and others have been amplified in accordance with our increased knowledge. On the other side, some paragraphs, not particularly relevant, have been cut out, and the same fate has befallen such of the poetical quotations as appeared to be no longer appropriate. But all such changes have been made reverently, and with the desire to do no violence to the spirit of the original work.

Two new plates of species of Ranunculaceæ and Violaceæ have been added, and the diagrammatic plate of previous editions, illustrating the terms used, has been superseded by four tinted plates, giving new drawings on a larger scale of all the terms previously illustrated. All the coloured plates have been specially compared for this edition with the carefully hand-coloured originals; and the colour-printing has been thereby improved.

The letterpress has been entirely reset in new type, and advantage has been taken of this fact to give an improved page, and by using a variety of types to make reference easier. The popular name of each species is also given precedence, as is fitting in a popular work, the scientific name following in italics. In the List of Contents the scientific name comes first, in order that all the species of a genus may be found together, but the reader who would seek any particular plant under either of its English names will find ample provision has been made for him in the several Indices at the end of the work. In previous editions the Flowering Plants and Rushes were indexed independently of the Grasses and Ferns, the former Index appearing at the end of Volume III. This arrangement had the effect of breaking the work into two, and has now been discarded in favour of a comprehensive General Index, which will be found in Volume IV.

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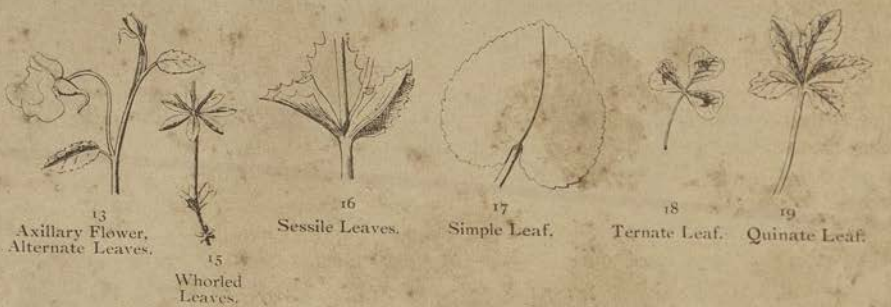
maritimum	Teasel-headed Trefoil	61	6	190
medium	Zigzag Clover	61	5	189
minus	Lesser Yellow Trefoil	62	10	192
ochroleucum	Sulphur-coloured Trefoil	61	3	189
pratense	Purple Clover	61	4	187
procumbens	Hop Trefoil	62	8	192
repens	White, or Dutch Clover	61	1	184
resupinatum	Reversed Trefoil	62	7	192
scabrum	Rough Rigid Trefoil	62	2	191
stellatum	Starry-headed Trefoil	61	8	190
striatum	Soft Knotted Trefoil	61	10	190
strictum	Upright Round-headed Trefoil	62	5	191
subterraneum	Subterranean Trefoil	61	2	191
suffocatum	Suffocated Trefoil	62	4	191
Trigonella ornithopodoides	Bird's-foot Fenugreek	58	10	183
Trollius europæus	Mountain Globe-flower	7	1	19
Turritis glabra	Smooth Tower-mustard	23	1	59
Ulex europæus	Furze, or Gorse	59	1	175
nanus	Dwarf Furze	59	2	176
Vicia bithynica	Rough-podded Purple Vetch	65	7	199
cracca	Tufted Vetch	65	8	198
hirsuta	Hairy Tare	65	12	201
hybrida	Hairy-flowered Yellow Vetch	65	6	200
lævigata	Smooth-podded Vetch	65	4	201

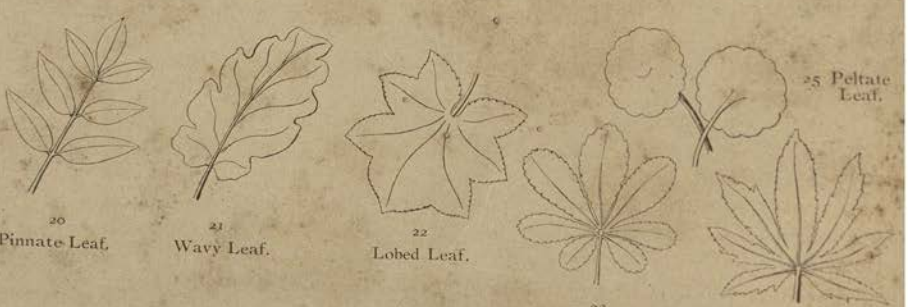
		Plate	Fig.	Page
Vicia lathyroides	Spring Vetch	65	1	199
lutea	Rough-podded Yellow Vetch	65	5	200
orobus	Wood Bitter Vetch	65	9	199
sativa	Common Vetch	65	2	199
var. β		65	2 *b*	200
sepium	Bush Vetch	65	3	200
sylvatica	Wood Vetch	65	10	197
tetrasperma	Slender Tare	65	11	202
Viola arenaria	Sand Violet	34	3	87
canina	Dog Violet	34	2	87
var. pumila	Dwarf Yellow-spurred Violet	33	5	
hirta	Hairy Violet	33	1	82
lactea	Cream-coloured Violet	33	6	87
lutea	Yellow Mountain Violet	33	8	88
odorata	Sweet Violet	33	2	82
palustris	Marsh Violet	33	3	86
persicæfolia	Peach-leaved Violet	34	1	87
sylvatica	Wood Violet	33	4	86
tricolor	Pansy Violet, or Heartsease	33	7	87

1 Fibrous Roots. 2 Creeping Stems. 3 Tap Root. 4 Premorse Root. 5 Tuberous Root. 6 Bulb.

7 Lily Bulb. 8 Simple Stem. 9 Branched Stem. 12 Creeping Stem. 10 & 14 Forked Stem. Opposite Leaves. 11 Ascending Stem.



13 Axillary Flower. Alternate Leaves. 15 Whorled Leaves. 16 Sessile Leaves. 17 Simple Leaf. 18 Ternate Leaf. 19 Quinate Leaf.



20 Pinnate Leaf. 21 Wavy Leaf. 22 Lobed Leaf. 23 Palmate Leaf. 24 Pedate Leaf. 25 Peltate Leaf.

Pl. A.

THE FLOWERING PLANTS

OF

GREAT BRITAIN

As one of the chief objects of this work is to aid those who have not hitherto studied Botany, some slight explanation is necessary of its mode of arrangement, and of the terms employed. English, rather than Latin, terms have in all cases been used by the writer, so as to adapt the Flora to the use of the unscientific.

The method of classification is that which is termed the Natural System. The system of Linnæus, though well suited for convenience of reference, has yielded in our day to an arrangement which is founded on the more true affinities in plants, and by which they are grouped according to their nature, structure, and properties, instead of being classed by more arbitrary signs.

Various Natural Systems have been employed by botanists, but that which is now chiefly used in Britain is one adapted from those of Jussieu and Decandolle. By this plan, the whole Vegetable Kingdom is divided into three great Classes. These are divided into Sub-classes, which are again divided into Orders, and these Orders into Genera, containing Species and Varieties. The last-named distinction is not always so obvious as the others, and it is one on which botanists often differ, some regarding only as a variety that which others have determined to be a species. A Species is a collection of individual plants which resemble each other in all important points, these characters being found constantly in the plants under all circumstances of soil or situation. A Variety is a difference which is not permanent nor essential. Thus, the colour of a flower, an unusual number of the petals, the thorny or smooth condition of its stem, is sufficient only to constitute a variety, because under other conditions of its growth the plant would be likely to lose these peculiarities.

The following explanation of the descriptive terms used will aid the reader to comprehend them:—

THE ROOT.—This often consists, as in most Grasses, of a tuft of fibres (Fig. 1), with pores at their extremities, by means of which they absorb nutriment from the soil.

In other cases, however, the nourishment drawn by the fibres is received in another organ; and this part is then termed the root-stock, and the fibres the rootlets.

The so-called Creeping root (2), of which we have familiar examples in the Couchgrass and Horseradish, is really a stem.

The principal forms of the root are :—

The Tap root (3): examples, Parsnip and Turnip. A tap root ending abruptly, as if bitten off, is termed premorse, as in the Premorse Scabious (4).

The Tuberous root consists of one or more roundish solid masses, from the surface of which rootlets arise, as in the Orchis (5).

Tubers and Bulbs are not roots, as commonly supposed, but underground stems.

The Potato-tuber shows this by its eyes or shoots. Other bulbs are formed of fleshy scales, as in the White Lily (7); of several concentric coats, as in the Onion and Bluebell (6). When of one uniform solid mass, like the Crocus, it is called a corm.

A STEM is said to be simple when without branches, and bearing only leaves and flowers, or leaves only, as the Grass of Parnassus (8).

A compound stem is repeatedly and irregularly branched, as in the Michaelmas Daisy (9).

A stem is termed forked when it divides into two branches of equal, or nearly equal, size, as in the Chickweed (10).

An ascending stem is one which, on first emerging from the root, is horizontal, and then becomes erect (11). When several stems grow from one root, the central one is often erect, and the others ascending, as in the Common Mallow.

A prostrate stem runs along the ground, and never becomes erect.

A creeping stem runs along the ground, and sends out roots from its joints (12). Some plants have erect stems and creeping scions or shoots from the base, as the Creeping Buttercup.

THE AXIL.—The angle between the leaf and the stem. A flower or bud rising from this angle is termed axillary. The blossoms of the Wall Pellitory, or the Balsam, are axillary between the leaves and the stem (13).

THE LEAF.—Leaves springing around the roots are termed radical, as the Primrose; those which grow on the stem are alternate, as the Balsam (13); or whorled, as the Common Cleavers (15); or opposite, as the Chickweed (14).

Leaves without stalks are termed sessile, as the Eryngo (16).

A leaf which is composed of one piece only is said to be simple, as the Marsh Marigold (17); a ternate leaf consists of three leaflets on a common stalk, as in the Clovers (18); a quinate, of five, as in Cinquefoil (19). A leaf is termed pinnate—from *penna*, a feather—when a number of leaflets are arranged along each side of a common leaf-stalk, as in the Briar-rose or the Vetches (20). A simple leaf is sometimes wavy at the edge, as in the Oak (21); or three, five, or seven lobed, as in the Mallow (22). A leaf is said to be palmate when the five or seven lobes are more than half-way divided, leaving a portion in the centre of the leaf like the palm of the hand, as in the Potentilla (23).

A leaf is pedate when the two side lobes are divided a second time at the edge near the stalk (24).

A pinnatifid leaf is one which is cut regularly into narrow segments, almost to the middle rib, as in the Small Scabious.

A pectinated leaf is one whose narrow segments resemble the teeth of a comb, as the Water Violet.

26
Perfoliate Leaf.

27
Connate Leaf.

28
Entire Leaf.

29
Crenate.

30
Saw-edged

43
Stipules.

31
Toothed.

32
Fringed Oblong.

33
Hair-like.

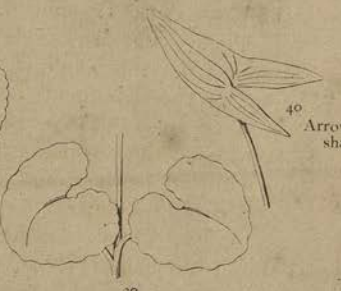
34
Strap-shaped.

35
Egg-shaped.

36
Inversely
Egg-shaped.

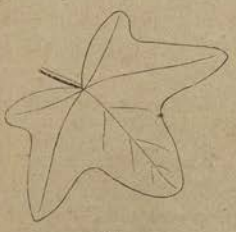
37
Rounded.

38
Heart-
shaped.



39
Kidney-shaped.

40
Arrow-
shaped.



41
Angular.

42
Sword-shaped.

44
Bract.

45
Calyx.

46
Umbels.

Pl. B.

A peltate leaf is one which has a stalk attached at or near its centre, as the Wall Pennywort (25).

A perfoliate leaf is one through the centre of which a stalk passes, as in Hare's Ear (26).

Two leaves joined at their bases, and having a stem passing through them, are termed connate, as in the Chlora or Yellow-wort (27).

A leaf which clasps the stem at its base, like that of the Yellow-horned Poppy, is termed amplexicaul.

The margin of a leaf may be entire, as in the Soapwort (28); crenate, as in Marsh Pennywort (29); serrate (saw-edged), as in Rose (30); toothed, as in Enchanter's Nightshade (31); or fringed, as in Rock-rose (32).

The terms employed in this volume to describe the forms of leaves are :—

Hair-like; as in Water Crowfoot (33).

Linear; as in Grass.

Strap-shaped; as in Sand Strapwort (34).

Oblong; as in Rock-rose (32).

Elliptical; oval, with both ends alike, as in the leaflets of Rose (30).

Egg-shaped; oval, with the base broader than the extremity, as in Pear (35).

Inversely egg-shaped; oval, with the base narrower than the extremity, as in 36.

Rounded; as in 37.

Heart-shaped; as in the Violet (38).

Inversely heart-shaped; as in the leaflets of Medick (18).

Kidney-shaped; as in Ground Ivy (39).

Arrow-shaped; as in Arrow-head (40).

Halbert-shaped; arrow-shaped, with the barbs turned outwards, as in the Common Pink Bindweed.

Angular; as in Ivy (41).

Sword-shaped; as in Flag (42).

STIPULES: two little wing-like pieces often seen at the base of the leaf-stalk, as in the Rose (43) and the Vetches. In the former, the stipule is oblong; in the latter, it is often arrow-shaped.

BRACTS are the small leaves often situated beneath the flower, as in the Broom Rape (44). When several of these floral leaves grow in a whorl, they form what is termed an involucre (47). In plants of the Umbelliferous tribe, they often grow at the base of the general and partial umbels, as in figure 46; and in Compound flowers, as the Dandelion, they are numerous at the base of the heads of flowers. In this flower they are more like scales than small leaves.

THE FLOWER. The CALYX, or flower-cup. This enfolds the bud before fully blown, and generally afterwards surrounds the blossom. It is usually green, and its several leaves are termed sepals (45). Sometimes the sepals unite at the base, forming a true cup, but the calyx varies much in form. When composed of two distinct lobes, one of which overhangs the other, it is termed gaping: in some cases it is double (48); and in the Composite and some other flowers, it is at first a mere ring, which ultimately becomes the pappus or down (49).

THE COROLLA. This is the brightly tinted portion of the flower, which is

enclosed within the calyx. The divisions are termed petals. The petals are either distinct, as in the Rose or Wall-flower, in which the upper large part of the petal is termed the limb, and the lower the claw; or they are united below, like the Primrose, the flat portion of which is called the limb, the lower the tube. The corolla has usually as many petals as there are sepals in the calyx; and if these are all of the same size and shape, the corolla is termed regular, as in the Briar-rose (50).

The most common forms of the regular corolla are :—

Salver-shaped; as in the Primrose and Phlox (51).

Funnel-shaped; as in the Cowslip (52).

Wheel-shaped; when the tube is very short and its margin quite flat, as in the Speedwells (53).

Bell-shaped; as in the Hare-bell (54).

Trumpet-shaped; as in the Honeysuckle (55).

The irregular one-petalled corolla is in some cases divided into two lobes, one of which overhangs the other. It is then termed labiate or lipped. The Sage, Mint, and Thyme, are common examples of labiate flowers. If the lobes are open, as in the Yellow Dead Nettle (56), the corolla is said to be gaping; if closed, as in the Toadflax (57), it is termed personate, from *persona*, a mask. Compound flowers, like the Daisy, Chamomile, etc., have frequently two kinds of florets in one blossom; those of the disk, or centre, being of a tubular form; those of the ray, strap-shaped.

When four petals are placed crosswise, the blossom is termed cruciferous; as the Wall-flower (58).

Papilionaceous, or butterfly-shaped blossoms, are those which, like the Pea or Vetch (59), have five irregular petals, the upper one large, and termed the standard; the two side ones, called the wings; and two lower ones, which are often combined, and which are termed the keel.

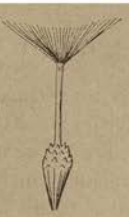
All flowers have not both calyx and corolla. The Lily and Tulip are examples of flowers without a green calyx; the little Pearlwort has no coloured corolla. The word perianth is used in both cases to express the part of the flower which encloses the stamens and pistils. Some flowers, as the Water Starwort, have neither calyx nor corolla (60). When the perianth is said to be double, it signifies that both corolla and calyx are present.

THE STAMENS. The stamens (61) are the small organs which stand around the centre of the perianth. The lower part of the stamen is termed the filament; the anther is the upper part. When the filament is slender throughout, it is said to be threadlike; but if thicker at the base and tapering at the point, it is termed awl-shaped (62). The anther is most frequently oblong, composed of two lobes and two cells, which contain the fine usually yellow powder called the pollen. Anthers without filaments are said to be sessile. Sometimes the filaments are united into little bundles, as in the St. John's Wort (63); sometimes they form a hollow tube, as in the Mallow (64), the anthers remaining separate, and being termed free; sometimes they are united into a ring, as in the Heath (65).

THE PISTIL (66) is the central part of the flower, and is composed of the ovary or germen (*a*), which contains the rudiments of the future seed; the style or column (*b*), and the stigma (*c*), which is at the summit of the style.

47
Involucre.

48
Double Calyx.



49
Pappus.

50
Regular Corolla.

51
Salver-shaped.

52
Funnel-shaped.

53
Wheel-shaped.

54
Bell-shaped.

55
Trumpet-shaped.

56
Gaping Corolla.

57
Personate Corolla.

58
Cruciferous.

59
Papilionaceous.

60
Imperfect Flowers.

61
Stamens.

62
Awl-shaped

63
United Stamens.

64
Stamen Tube.

65
Anther-ring.

66
Pistil.

67
Carpels.

68
Pistillate Flower.

69
Staminate Flower.

70
Superior Ovary.

71
Capsule.

72
Silique.

73
Pod.

74
Berries.

75
Nut.

Pl. C.

It is sometimes a mere viscid point, but more often it is a flat, lobed, or globular organ.

Most flowers have but one pistil; but there is frequently a single ovary bearing several styles and stigmas. The ovary, in such cases, usually consists of several cells, each of which, including its style and stigma, is termed a carpel (67). The same name is given to the ovaries in flowers when they are separated, or in others, when they are united.

The same plant sometimes bears flowers, some of which have only stamens, while others have only pistils (68, 69), as in Willow and Oak. Such are termed monœcious plants. In other cases the pistils and stamens grow, not only on different flowers, but on different plants. These are then said to be *diœcious*. As those flowers only which contain pistils produce seed, these are termed fertile; while those which have stamens only are said to be barren.

When the ovary is inserted above the base of the perianth, it is termed superior, as in the Primrose (70); when below, inferior, as the Rose. The perianth is termed superior or inferior, according as it is inserted above or below the ovary.

THE FRUIT. The fruit is the enlarged ovary, and is the naked seed, or the seed with its case or covering, also termed the pericarp. The following are some of its various forms:—

The capsule; a dry case or bag, either opening by valves, as in the Violet; by teeth, as in Lychnis; by pores, as in Poppy; or by dividing into an upper and under portion, as in the Pimpernel (71).

The silique; a dry long pod, consisting of two halves or valves, and a central partition, to the internal margin of which the seeds are attached, as in the Cabbage (72).

The silicle or pouch is a shorter, broader pod, like that of the Shepherd's Purse.

The pod or legume is a long seed-vessel without a partition; the seeds forming a single row, as in the Pea (73).

The berry; a pulpy fruit, in which the seeds are immersed, as the Blaeberry or Currant (74).

The nut; a dry fruit in a hard shell, as the Hazel (75).

The drupe; a nut enclosed in a pulpy covering, as the Cherry (76).

The cone; a number of scales overlapping each other, each of which covers two seeds (77).

THE SEED. This is said to be dicotyledonous when composed of two lobes, like the Bean (78), which are termed the cotyledons, and enclose the plumule, or embryo of the future plant. As the seed germinates, the cotyledons either rise above the ground, as in Mustard, or remain beneath, as in the garden Pea.

RECEPTACLE. This is the part of the flower on which all the other parts rest. It is very obvious in the Dandelion, where it is white and dotted (82). It is sometimes conical, as in the Daisy (79); chaffy, as in Cat's Ear (80); bristly, as in Thistle (81).

NECTARY. Any distinct organ which contains honey. In the Crown Imperial it consists of a number of cells around the centre of the flower. In the Crowfoot (83) it is a scale at the base of the petal.

The INFLORESCENCE indicates the mode in which the blossoms are placed on the stem.

A flower-stalk rising directly from the root, and bearing no leaves, is termed a scape, as in the Daisy or Primrose (84).

It is axillary when inserted in the angle between the leaf and stem, as in Balsam (13).

It is terminal when at the extremity of the stem, as the Violet and Grass of Parnassus (8).

A flower-stalk bearing one flower only is termed simple.

A stalk bearing a number of flowers seated on it one above another, like those of the Plantain, is termed a spike (85).

When, instead of being sessile, the flowers grow on simple stalks, it is a raceme, as in Melilot (86).

A panicle is a branched cluster, as in the Oat or Spurrey (87).

A corymb has the lower flowers on long stalks, and the upper either nearly or quite sessile (88).

A cyme has the stalks irregularly branched, but the flowers nearly level at the top, as in the Laurustinus and the Strawberry (89).

The umbel has the flower-stalks springing from a common centre, and bearing each a single flower (90), as in Ivy. When instead of a single flower on each stalk, there is a smaller umbel, the inflorescence is a compound umbel, the larger division being termed a general, and the smaller a partial umbel (91).

A head is like a simple umbel, except that the flowers are all sessile, as in Thrift (92).

A catkin resembles a spike, except that the flowers are enclosed within a small scale or bract, as in the Sallow (93).

NATURAL ARRANGEMENT OF PLANTS.

The Vegetable Kingdom is divided into the three great Classes of DICOTYLEDONES, MONOCOTYLEDONES, and ACOTYLEDONES.

CLASS I. DICOTYLEDONES.

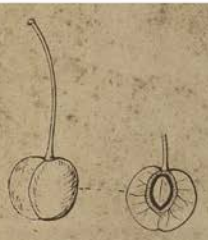
This Class consists of such plants as produce seeds divisible into two lobes or cotyledons. It is divided into four Sub-classes,—Thalamifloræ, Calycifloræ, Corollifloræ, and Monochlamydeæ.

Sub-class I. THALAMIFLORÆ.

Flowers having both calyx and corolla; petals distinct, inserted into the receptacle, or thalamus; stamens springing from the base of the ovary. This Sub-class contains twenty-two British Orders.

Sub-class II. CALYCIFLORÆ.

Flowers with calyx and corolla; sepals distinct, or united; petals distinct; stamens inserted in the calyx, or close to its base. This Sub-class contains eighteen British Orders.



76
Drupe.

77
Cone.

78
Dicotyledon.

79
Conical Receptacle.

80
Chaffy Receptacle.

81
Bristly Receptacle.

82
Dotted Receptacle.

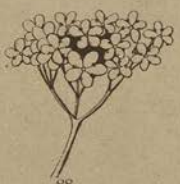
83
Nectary.

84
Scape.

85
Spike.

86
Raceme.

87.
Panicle.



88
Corymb.

89
Cyme.

90
Umbel.

91
Compound Umbel.

92
Head.

93
Catkins.

Pl. D.

Sub-class III. COROLLIFLORÆ.

Flowers with calyx and corolla; petals united, usually bearing the stamens. In this Sub-class there are twenty-seven British Orders

Sub-class IV. MONOCHLAMYDEÆ.

Perianth single or none, no plant in this Sub-class having both calyx and corolla. It contains thirteen British Orders.

CLASS II. MONOCOTYLEDONES.

Seeds with a single cotyledon. It contains two Sub-classes,—PETALOIDEÆ and GLUMACEÆ.

Sub-class I. PETALOIDEÆ.

Flowers with coloured perianth. It contains sixteen British Orders.

Sub-class II. GLUMACEÆ.

Flowers formed of chaffy scales, or glumes. This Sub-class contains the Grasses and Sedges.

CLASS III. ACOTYLEDONES.

Flowerless plants. It consists of the Ferns, Mosses, Liverworts, Lichens, Sea-weeds, and Fungi.

CLASS I. DICOTYLEDONOUS OR EXOGENOUS PLANTS.

The plants of this most extensive Class of the Vegetable Kingdom are termed DICOTYLEDONOUS, because their seeds are formed of two or more cotyledons, or lobes; and EXOGENOUS, because the stems of the plants increase by new layers on the outside of the pith, or central fibre, though within the bark. Dicotyledonous plants have a distinct deposition of pith, cellular tissue, spiral vessels, wood, and bark, which in Monocotyledonous plants are all confounded. In shrubs and trees of the former class, the wood is arranged in concentric layers, the hardest part being near the pith; they are also branched, as the Oak and Elm, and not simple, like the Palm, which is a Monocotyledonous tree. The leaves are veined in a network, and are distinctly articulated with the stem. The flowers are furnished with stamens and pistils, and their parts are usually arranged in the number of five or four, or of some multiple of five or four.

Sub-class I. THALAMIFLORÆ.

Flowers furnished with calyx and corolla; petals distinct, inserted into the receptacle, or thalamus; stamens springing from below the base of the ovary.

Natural Order I. RANUNCULACEÆ—THE CROWFOOT TRIBE.

Calyx of mostly five or six pieces or sepals, frequently irregular, as are sometimes the petals, which are generally five or more in number, but occasionally wanting; stamens usually numerous, inserted on the receptacle; ovaries usually many; fruit consisting of one or many-seeded carpels; in

Actæa, a berry. Herbs or shrubs. Leaves often divided. Plants acrid and poisonous, some of them—as Aconitum—eminently so. This extensive tribe of plants may be found in most of the temperate countries of the globe, but they are unknown in the lowlands of the tropics. They characterise a cold, damp climate.

* *Carpels one-seeded.*

1. TRAVELLER'S JOY (*Clématis*).—Sepals 4—6, resembling petals; corolla wanting; carpels terminated by a long, mostly feathery, awn. Name from the Greek *kléma*, the shoot of a vine.

2. MEADOW RUE (*Thalictrum*).—Sepals 4—5; corolla wanting; carpels without tails, sessile, or nearly so. Name from the Greek *thallo*, to flourish.

3. WIND-FLOWER (*Anemóne*).—Sepals resembling petals, 4—20; involucre of three-cut leaves, usually distant from the flower. Name from the Greek *anemos*, the wind, because the flowers are easily moved by the wind.

4. PHEASANT'S EYE (*Adónis*).—Calyx of 5 sepals; petals 5—16, without a nectary; carpels without awns. Name from *Adonis*, a youth who was killed by a wild boar, and whose blood was fabled to have stained the flower.

5. CROWFOOT, SPEARWORT, etc. (*Ranúnculus*).—Calyx of 5 (rarely 3) sepals; petals 5 (rarely numerous), with a pore or nectary at the base; carpels without awns. Name from *rana*, a frog; these plants growing much where frogs abound.

6. MOUSE-TAIL (*Myosúrus*).—Calyx of 5 sepals, prolonged at the base into a spur; petals 5; carpels crowded into a lengthened spike. Name, Greek for a mouse's tail.

* * *Carpels many-seeded.*

7. GLOBE-FLOWER (*Tróllius*). — Sepals 5 — 15, coloured; petals 5, or many, small, narrow, flat. Name said to be derived from *trol* or *trolen*, a ball, or globe, in old German.

8. MARSH MARIGOLD (*Cáltha*).—Sepals 5 or more. Petals absent. Name from the Greek *kálathos*, a cup.

9. HELLEBORE (*Helléborus*).—Sepals 5, like petals, persistent, that is, not falling off; petals 8—10, small, tubular; carpels 3—10. Name from the Greek *helein*, to take away, and *bór*, food.

10. WINTER ACONITE (*Eranthis*).—Sepals 5—8, petaloid, soon falling; petals small, 2-lipped; stamens numerous; carpels 5—6, stalked. Name from the Greek *ear*, spring, and *anthos*, flower.

11. COLUMBINE (*Aquilégia*).—Sepals 5, petal-like, soon falling off; petals 5, tubular, gaping upwards, and terminating in a horn-shaped spur or nectary; carpels 5. Name from the Latin *aquila*, an eagle, the claws of which its nectaries are fancied to resemble.

12. LARKSPUR (*Delphínium*).—Sepals 5, petal-like, soon falling off, the upper one helmet-shaped, with a long spur at the base; petals 4, the two upper on long stalks, and concealed in the spurred sepal; carpels 3—5. Name from *delphin*, a dolphin, to which animal the flower bears a fancied resemblance.

13. MONK'S-HOOD (*Aconítum*).—Sepals 5, petal-like, the upper one helmet-shaped but not spurred; nectaries 2, stalked, tubular at the extremity,

and concealed beneath the helmet-shaped sepal; carpels 3—5. Name of uncertain origin.

14. BANE-BERRY (*Actæa*).—Sepals 3—5, soon falling off; petals 4—10 fruit a many-seeded berry. Name from the Greek *akté*, the Elder, the leaves somewhat resembling those of that plant.

15. PEONY (*Pæonia*).—Sepals 5, unequal; petals 5—10; carpels 2—5 with fleshy stigmas, formed of two plates. Name from *Pæon*, a Greek physician, who is said to have healed wounds with the plant.

1. TRAVELLER'S JOY (*Clématis*).

Traveller's Joy (*C. vitálba*).—Stem climbing, leaves pinnate, leaflets ovate, and heart-shaped at the base; foot-stalks of leaves twining; flower stalks rather shorter than the leaves. Plant perennial. This beautiful shrub with its dark-green foliage, and its numerous blossoms of greenish-white hue, is very common in the hedges in those counties where chalk or limestone abounds. Gerarde well named it the Traveller's Joy, for it may be seen far away, decking the hedges, in June and July, with its blossoms, and holding itself to the stronger plants near it by the twisting leaf-stalks which serve as tendrils. In the early part of the winter its snowy tufts of seeds are very conspicuous, and as they become soiled by wind and weather, they look like masses of cobwebs.

This Clematis is our only British species, though similar kinds abound in the woods of warmer regions of the globe, spangling the forests of America and New Zealand, like those of Australia, with thousands of silver stars. Though our native kind is almost scentless, many of the species are exquisitely fragrant—the sweet-scented Virgin's Bower of our garden (*Clématis flámmula*) being very much so.

The plants of this genus are all acrimonious. Of the scented garden kind, Miller remarks, "if one leaf be cropped on a hot day in the summer season, and bruised, and presently put to the nostrils, it will cause a smell and pain like a flame." Our native species is corrosive, but its acrid principle is destroyed either by the withering influence of the sun, or by infusing the plant in boiling water. The fresh leaves are said to be used by beggars to cause wounds, in order to excite compassion; hence the French sometimes term this shrub *Herbe aux gueux*, though they also call it by the more pleasing names of *Consolation des voyageurs*, and *Viorne des pauvres*. It is undoubtedly poisonous in its fresh state; but the leaves of this plant are said, when dried, to form good fodder for cattle, and they were once used in medicine. The hollow stem, when old, is cut into small pieces by the German shepherds, and smoked for pipes, the acrid flavour of the wood being fancied somewhat to resemble that of tobacco. Kentish schoolboys use the stem in the same way, and in France these long stems are woven into rustic baskets and bee-hives. The seeds are very numerous, and easily dispersed by means of their feathery crown; and as they retain their germinating principle for a great length of time, the plant is sometimes more abundant in the hedge than the farmer would desire, as it suffocates the bushes among which it climbs. Country people call it Withywind, Wild Vine, Old Man's Beard, and Virgin's Bower, but Gerarde's name, given it from "decking and adorning wales and hedge

where people travel," is one by which it is very generally known in England.

2. MEADOW RUE (*Thalictrum*).

1. **Alpine Meadow Rue** (*T. alpínum*).—Stem simple, nearly leafless; flowers in a simple terminal cluster, drooping when fully blown. This is a graceful and elegant little plant, with delicate white blossoms, growing on a stem from four to six inches high; but it occurs only on the mountain pastures and alpine bogs between Yorkshire and Shetland; also in Carnarvon. It flowers in June and July, and is perennial. It is sometimes called Feathered Columbine. The name of the genus, taken from the Greek of "to flourish," is well given, because of the lively green tint of the foliage of this, as well as of our other native kinds. The leaves are notched, with rounded lobes, and spring from the roots on long stalks.

2. **Lesser Meadow Rue** (*T. mínus*).—This species is so much confined to stony fields on chalky and limestone soils, that it has by some botanists been termed *T. calcareum*. Its stem is zigzag and branched, from one to four feet high; its leaves are thrice pinnate, the leaflets three-cleft, and they are covered with a sea-green "bloom." When the plant thrives well the stem usually becomes hollow. The flowers have an unpleasant odour; they are greenish, drooping, and so full of stamens that they seem like little tufts of gold threads; they appear in June and July, and the plant is perennial. Several varieties of this species occur, and these have by some botanists been regarded as distinct species.

3. **Yellow Meadow Rue** (*T. flávum*).—Stem erect, three or four feet high, and branched; leaves twice pinnate; flowers crowded, yellow, and not drooping. This species, which is found on the banks of rivers and ditches, is more generally known in England than either of the others. The Dutch term it *Waterruit*. It is rare in Scotland, being found chiefly in the Vale of Clyde. Its leaflets are broadly wedge-shaped, and three-cleft. A very handsome species of Meadow Rue is cultivated in the garden, but this has no old renown, and must not be confounded with the Common Rue (*Ruta gravéolens*), which was brought from the South of Europe, and is now in every cottage garden. That was an old favourite herb with the monks, and was never absent from the "physic garden" of the monastery. It was called Herb of Grace, because of its supposed virtues, and because mingled with the "holy water" used for sprinkling the congregation before and after service. Thus, Ophelia says,—

"We call it Herb of grace o' Sundays."

It is a plant of some power, and one of its kindred is said to blister the hands of him who gathers it without gloves.

3. WIND-FLOWER (*Anemóne*).

1. **Wood Anemone** (*A. nemorósa*).—Leaves ternate, leaflets lobed and cut; flower somewhat drooping; sepals six; carpels without tails. The sunshine of spring has hardly dawned upon the leafless woods before this flower is in blossom. Often as early as the middle of March it gleams among the primroses, and soon it covers as with a white carpet many a secluded copse. Pliny said of the Anemone that it never blooms but when the wind blows;

1 TRAVELLER'S JOY
Clematis vitalba

2 ALPINE MEADOW RUE
Thalictrum alpinum

3 LESSER MEADOW RUE
Thalictrum minus

4 YELLOW MEADOW RUE
Thalictrum flavum

Pl. 1.

and our own species is no exception, for it grows on high mountainous places, and puts forth its flowers when winds are wildest. As Clare has said, these flowers,

> "Dyed in winter's snow and rime,
> Constant to their early time,
> White the leaf-strewn ground again,
> And make each wood a garden glen."

The Anemone bears the name of Wind-flower in other lands than ours. It is *L'Herbe au vent* of the French, but the form of its petals gives it the name in Italy of *Fiore stella*. Charlotte Smith has well described its starry appearance :—

> "He there
> Gathers the copse's pride, Anemones,
> With rays like golden studs on ivory laid,
> Most delicate! but touch'd with purple clouds,
> Fit crown for April's fair but changeful brow."

Sometimes the colour of the Wood Anemone is of a most delicate crimson; and it was, perhaps, because of this faint flush on its white petals that the Egyptians made it the emblem of sickness. It is occasionally found tinted with a pale sky-blue colour. Usually, wherever we find this flower, it grows in great abundance; but there are some districts in which it is rare. Its leaves are of a very dark green, the stem about six inches high, and the fleshy creeping rootstocks produce a strong network of fibres, which sometimes runs over a great extent of ground far beneath the surface. The plant is most luxuriant on moist soils; it blossoms till about the end of May, and is perennial. It grows very far north, and is very common in the woods of North America. Mr. Lyell saw it in the woods of Virginia, growing beside our beautiful purple wood cranesbill (*Geranium sylvaticum*) and amidst multitudes of scentless violets.

2. **Pasque Flower** (*A. pulsatilla*).—Leaves as well as the involucre doubly pinnatifid; flower slightly drooping; sepals six; carpels with feathery tails. This species grows on stouter stalks than the wood anemone, which are usually from four to ten inches high. Its dark rich purple stars, when half unfolded, glitter in the sunshine like satin, on account of the soft silky hairs with which the flower is covered externally, and which render the young buds extremely pretty. They open in April or May, and the name of the plant has a reference to the Paschal or Easter season. Several flowers, both in France and England, are called Easter flowers: thus *Pâquerette* is one of the French names of the daisy, and our gardeners have an Easter hyacinth; but this Anemone has a better claim to its name than the other plants, because of the uses to which it was formerly applied. The petals of the flower yield a bright clear green dye, and the whole of the plant gives a good rich green colour. This, with other wild flowers, was much used in days when in England the custom prevailed of staining eggs of some richly-marbled tints, and presenting them as Easter gifts, under the name of Pask, Paste, or Pace eggs. This practice, still so common on the Continent, is now little followed in our country; yet even in our days Paschal eggs are to be found at Easter, in different parts of the kingdom, often beautifully mottled with dyes obtained from logwood, or from the flowers of our fields. Our anemone is

not now, however, required, as it was in the days of Edward I., when, as ancient records tell, 400 eggs were bought to be stained and gilded for the royal household; and the flower is not frequent enough to afford us a dye available for any more important purpose. The Pasque-flower is a rare plant, growing naturally on chalk downs and limestone pastures, its range in these islands being restricted between Yorkshire, Essex, and Gloucestershire. It is found still further north than the wood anemone, and Sir John Franklin saw it in blossom on the shores of Hudson's Bay on May 10. Like most of its tribe, its properties are of a very acrid nature, and when laid upon the skin it will raise a blister far more difficult to heal than that of the Spanish fly. If the leaves and flowers be taken with distilled water, they prove emetic; but the root has a sweet flavour. Cattle refuse this plant, though the goat, which seems able to eat the most poisonous herbs, appears to relish this. It is perennial, and is the only one of our wild anemones which has silky or feathery awns. These are very beautiful, and float upon the winds of the early summer, as does the thistle-down of the later season. It is also worthy of note that the outer stamens are imperfect, having been converted into stalked nectaries, producing honey for the attraction of certain bees, flies, moths, and beetles that help to fertilize it.

3. **Blue Mountain Anemone** (*A. apennína*).—Leaves thrice ternate, segments lobed and cut; involucres stalked, ternate and cut: sepals or petals twelve or more; tails not feathery. This Anemone, which is of a most brilliant blue colour, is in blossom in April and May; but it is very rare, and not a real native of our woods. It has been found in Wimbledon Park, Surrey; near Harrow; Luton Hoe, Bedfordshire; near Berkhamsted, Hertfordshire; and Cullen, Banff. It is sometimes a border-flower of the garden, whence it has probably strayed into the wood.

4. **Yellow Wood Anemone** (*A. ranunculoides*).—Leaves ternate or quinate; leaflets cut and toothed; involucres shortly stalked, ternate, cut and toothed; sepals or petals 5—6; carpels not feathery. This flower, like the last, is rare, and certainly not truly wild. The blossoms appear in June, and are of a bright yellow colour. It has been recorded from near Wrotham, Kent; and at Abbott's Langley, Herts, it still grows abundantly in one or two places.

4. Pheasant's Eye (*Adónis*).

Corn Pheasant's Eye (*A. autumnális*).—Petals concave, forming the blossom into a cup; stem branched; leaves much divided. This plant is the only British species, and is by many writers considered a doubtful native, but it occurs in some corn-fields. It has been found about London, Isle of Wight, Norfolk, Gloucestershire, Glasgow, and Dublin; and the author has gathered it from corn-fields near Maidstone. It blossoms in June, and remains till autumn, the deep crimson flowers resembling the buttercup in shape. It had the old English names of Rose a rubie, and Red Maythes, by which Gerarde says it was known to the "herbe women" in his time, but it is called by the name of Adonis throughout Europe, and connected with the classic fable which tells that the blood of the youth Adonis stained its petals. It was a favourite flower with our old poets, sometimes for the sake

of the rhyme being called Adon, as by Brown in his Pastorals. Ben Jonson tells the nymphs to bring fair Adonis' flower in their garland. Drummond of Hawthornden alludes to it, and Shakspere refers to the legend on more than one occasion. The French, Dutch, Germans, and Italians all commonly call it Adonis or Adonide; but in France it has, besides, the names of *Aile de perdrix*, *Aile de faisan*, and *Goutte de sang*. Shakspere makes one of his personages say, —

> "Thy promises are like Adonis' gardens,
> That one day bloom'd and fruitful were the next;"

but our poet has somewhat misapplied the character of these gardens, for they were merely pots of fennel or lettuce, which were carried about on the festival of Adonis, and which, as the Greek writers say, were thrown away on the following morning. If, like the Hindoos, we were extremely partial to the colour of red, and believed that it had a wondrous power to exhilarate the spirits, we might wish much to claim our Pheasant's Eye as a native flower; for it is the only one in our fields which has the crimson tint, and the species of the scarlet hue are rare, consisting only of poppies and pimpernels. It is an annual plant, and grows to the height of nearly a foot.

This Adonis, as well as some other species, is frequent as a garden flower. It is somewhat acrimonious, but less so than the exotic kinds; one of these (*Adonis capensis*), which grows wild on the mountains of the Cape of Good Hope, is said by Thunberg to be commonly used instead of cantharides, by the natives of that country, to raise blisters on the skin.

5. Buttercup, Spearwort, etc. (*Ranúnculus*).

* *Flowers white.*

1. **Water Crowfoot** (*R. aquátilis*).—Stem submersed; lower leaves divided into hair-like segments, spreading in all directions, and forming a globular mass; floating leaves three-lobed, their edges cut into rounded notches (occasionally wanting). Few of the common plants of our waters add more to their beauty than this. Water-lilies and flowering rushes are indeed gayer flowers, but they are comparatively rare, while this lies in large silvery patches during spring and summer on many of our lakes and ponds. It is a very variable plant, for when growing in softly-running streams, it produces only its tufts of hair-like leaves, which are submersed; but when the water is still, the large roundish flat leaves and showy flowers are to be seen in great abundance, forming a brilliant mass of green and white. This species is singular among a tribe of acrid plants, as being free from their usually deleterious principle, and is, unlike any other Ranunculus, very nutritive food for cattle. It has been proved capable of being converted by agriculturists to very useful purposes. In the neighbourhood of Ringwood, on the borders of the Avon, many cottagers have been known to support their horses and cattle almost wholly on this aquatic plant, a man going in a boat on the water to fetch a quantity of it to the shore, which is soon eagerly eaten by these animals. One man kept five cows and one horse on this food, and the small amount of pasture which the common could supply, and not a ton of hay throughout the whole year had been consumed by them. The great quantity of foliage which in some ponds is found on this White Crow-

foot, affords a constant supply in all seasons, save when the waters are frozen up. It is very difficult to account for the absence of the acrimonious principle in this species, because the presence of water is so often found to increase the noxious properties of vegetables. Thus, many plants of the Umbelliferous tribe are found, when growing on a marshy soil, to possess deleterious properties which do not belong to them in drier localities. The modern view is that the terrestrial species of Ranunculus have developed the poisonous property in self-defence against browsing quadrupeds; the aquatic species are little exposed to such attacks, therefore they have not developed acridity.

2. **River Crowfoot** (*R. flúitans*).—Stem, stout, long; floating leaves rarely present, three-lobed or trifoliolate; submerged leaves divided into a few black, stiff, hair-like segments; leaf-stalks long and stout. Flowers three-quarters to one inch across; petals broad, oval, often more than five, and in two series; stamens numerous; achenes large, smooth, swollen. This plant may be found fairly distributed south of the Clyde and in Ireland, but only in deep lakes and running water. It flowers from June to August.

3. **Water Fennel** (*R. trichophýllus*).—Floating leaves when present trilobed or trifoliolate; submerged leaves with very short footstalks, and divided into many black, hair-like segments which remain rigid when taken from the water. Flowers one-third to half an inch across; petals small, narrow, and far apart. Stamens few; achenes few. Found flowering during May and June in the still waters of ponds and ditches throughout the three kingdoms.

4. **Rigid-leaved Water Crowfoot** (*R. circinátus*).—Stem floating, leaves all submerged, divided into many rigid segments which remain in one place; footstalk one inch. Flowers three-quarters of an inch across; petals broad, twice the length of sepals; stamens numerous. This species, which is little subject to variation, will be found in waters with little or no movement, flowering from June to August.

5. **Three-lobed Water Crowfoot** (*R. tripartítus*).—Stem aerial, rooting in mud, or partially floating in shallow water; all the leaves kidney-shaped, three-lobed, or with three wedge-shaped segments. Flowers quarter of an inch across, with narrow, three-nerved pinkish petals; stamens few; achenes numerous, smooth. This species, which is very similar to forms of *R. aquatilis*, may be found in the South and West of England only, flowering from May to July.

6. **Mud Crowfoot** (*R. lenormándi*).—Stem creeping, stout, and branched. Leaves all round or kidney-shaped with crenate edges. Flowers from quarter to half an inch across, with oblong, five-nerved petals; stamens few. This species is in flower from June to August, in marshes and ditches south of the Clyde, and in South Ireland.

7. **Ivy-leaved Crowfoot** (*R. hederáceus*).—Stem submerged, and throwing out roots or creeping; leaves roundish, kidney-shaped, with 3—7 entire lobes; petals but little longer than the calyx; stamens 5—10. Plant perennial. This plant, which is in flower throughout the summer, is much smaller than the last species, and its blossoms are not nearly so attractive. It grows either in shallow waters, or in places where water has stood.

1 WATER CROWFOOT
Ranunculus aquatilis

2 IVY-LEAVED CROWFOOT
Ranunculus hederaceus

3 ALPINE WHITE CROWFOOT
Ranunculus alpestris

4 GREAT SPEARWORT
Ranunculus lingua

5 LESSER SPEARWORT
Ranunculus flammula

Pl. 3.

* * *Flowers yellow; leaves undivided.*

8. **Great Spearwort** (*R. lingua*).—Leaves narrow, tapering to a point, without stalks; stem erect. Plant perennial. Flowers large, June to August.

We have by our stream and river sides, and on bogs, two species of Spearwort which are both common flowers, resembling tall buttercups in all things but their slender spear-shaped leaves, to which they owe part of their familiar name. The old Saxon "wort" or "weed" is retained in the English names of many plants, as milkwort, butterwort, etc., all of which were well known to our forefathers.

The foliage of this Spearwort is thick and succulent, its stem often three feet high, and of a bright pale green. The plant is conspicuous on the bog, where it towers above the bog asphodel, and the marsh orchis, and the ivy leaved bell-flowers, and many other lovely plants of the marsh land; for true to the life is Tennyson's description:—

"One willow over the river wept
And shook the wave as the wind did sigh;
Above in the wind was the swallow,
Chasing itself at its own wild will,
And far through the marish, green and still,
The tangled water-courses slept,
Shot over with purple, and green, and yellow."

9. **Lesser Spearwort** (*R. flammula*).—Leaves variable, narrow, tapering to a point, slightly stalked; stem creeping at the base. Plant perennial. This species, which is much smaller than the last, is often its companion on the bog. It remains in bloom somewhat later, and in some specimens its leaves are covered with a silky down. This lesser species is one of our most acrimonious plants, and is very abundant on the margins of the Highland lakes, as well as on the borders of English ditches. Dr. Withering, who, besides being a good botanist, was a skilful physician, remarks of this Spearwort:—"I feel myself authorized to assert that, in the case of poison being swallowed, it is preferable to any medicine with which I am acquainted." He adds, "that besides its speedy emetic action, it does not excite the painful bodily sensations which are often occasioned by the dose of white vitriol so generally given in such cases." The distilled water of this Spearwort is occasionally used as an emetic; but, notwithstanding this authority, its use is not frequent. The plant is sometimes laid on the skin to raise blisters; but these are extremely difficult to heal.

10. **Serpent's-tongue Spearwort** (*R. ophioglossifolius*).—Annual, erect, smooth or slightly hairy, the lower leaves stalked, broadly egg-shaped or heart-shaped. Its slender stem is from six to twelve inches long, branched and hollow; at first somewhat trailing, then erecting itself to flower. It bears numerous small yellow flowers, about a quarter of an inch across, from June to August. The only British habitat of this species is the marshes of southern Hampshire; formerly it was also found in Jersey.

11. **Lesser Celandine, or Pilewort** (*R. ficaria*).—Leaves heart-shaped, or kidney-shaped, and stalked, angular; sepals 3; petals about 9. Stem, single flowered. Plant perennial. Every lover of flowers welcomes

the bright glossy blossom, which, while March winds are yet blowing, spangles meadows and banks, and enlivens some of our woodlands where the trees are not thickly planted. It is a flower which has suggested some beautiful thoughts to poets; and few who have looked on it, as the sun shone brightly on its star-like form, would not join with Wordsworth in telling its praises, and feel that there was truth in his playful fancy respecting it. This so differs in the shape of its blossoms from our Spearworts and Crowfoots, that some writers place the Celandine in a distinct genus, when it is called *Ficaria verna*. The leaves are dark green, varied with a paler tint, very glossy and brittle. Children in country-places in Kent rub their teeth with them, to improve their whiteness. They were also formerly boiled and eaten; but the author, who has tried their worth, cannot say much in their favour. Linnæus recommended to the agriculturist the extirpation of this plant from the pasture, on account of the space occupied by its roots and leaves, and because he considered it injurious to herbs growing near it. Cattle refuse to eat it. It is known in some places by the name of Ficaria; and this was given from *ficus*, a fig, because of the little fig-shaped tubercles on the roots. It is owing to the large amount of plant-food stored up in these tubers in one season that the plant is enabled to flower so early and freely next year. It grows throughout Europe, and Dr. Clarke found it near Moscow, just losing its blossoms, on May 29. Elliott has some beautiful lines on the flower :—

"The Celandine,
The starry herald of that gentlest gale,
Whose plumes are sunbeams dipp'd in odours fine."

* * * *Flowers yellow; leaves divided.*

12. **Wood Crowfoot** (*R. auricomus*).—Leaves smooth, lower ones kidney-shaped, three-lobed, upper ones entire; calyx shorter than the petals; petals unequal in size. Plant perennial.

This is a common flower in woods, and much like the meadow buttercup, but the blossoms are not so large, and the mode of growth more straggling. It blooms in April and May, and, unlike the other Crowfoots, is destitute of acridity.

13. **Celery-leaved Crowfoot** (*R. sceleratus*).—Leaves smooth, cut into oblong segments; root-leaves on stalks; stem hollow, juicy; carpels collected into an oblong head. This plant, which is very common in watery places, by the sides of pools and ditches, is usually about a foot and a half or two feet high. It flowers in June, and the blossoms are of pale yellow, and very small size. It is one of the most acrid of the crowfoots, and in former times was in frequent use as a blister; but it is a very unsafe application, for it readily causes a wound, which will not so easily be healed. A friend of the writer's, who had wandered by a stream's side, and carried away thence a large nosegay of forget-me-nots, and yellow flag-flowers, and meadow-sweet, had placed among them a quantity of this Crowfoot; wearied with the heat, he lay down on a grassy bank, placing his nosegay near him, that he might enjoy its odours. In the course of a restless slumber, however, his cheek lay upon the flowers, and he was awakened by a tingling sensation, which he at first attributed to the stings of some of those insects which hover over

1. MEADOW CROWFOOT.
Ranunculus acris.

2. PALE HAIRY BUTTERCUP.
Ranunculus hirsutus.

3. CORN CROWFOOT.
Ranunculus arvensis.

4. SMALL-FLOWERED CROWFOOT.
Ranunculus parviflorus.

5. COMMON MOUSE TAIL.
Myosurus minimus.

Pl. 4.

the waters. He soon discovered that it had been caused by this plant, and a redness and irritation remained on one side of the cheek and neck for some hours afterwards, notwithstanding that means were used to allay it. Burnett says that even carrying this plant in the hand will cause inflammation; yet the shepherds of Morlachia, notwithstanding the acridity of its leaves, eat them when boiled. The distilled water procured from this crowfoot is intensely acrimonious, and, when cold, deposits crystals which are inflammable. The plant is found in almost every part of the world, and has been seen very far north, growing by the streams. Another water-side species, termed the Frigid Ranunculus, has been found in some of the highest latitudes yet explored. Dr. Sutherland, when in the Polar expedition in search of Sir John Franklin, saw this beautiful little plant growing on the shores of Assistance Bay, a spot which he and his companions had to reach by walking over ice.

14. **Bulbous-rooted Crowfoot** (*R. bulbósus*).—Calyx reflexed; flower-stalks channelled; leaves cut into three variable leaflets, which are three-lobed, or three-partite, and cut; root bulbous. Perennial. This flower, which grows on a stem about a foot high, is one of the three species commonly called Buttercups. It is the kind which is earliest in blossom, and which in May often embroiders with gold the grassy meadow.

> "The daisy and the buttercup,
> For which the laughing children stoop
> A hundred times the livelong day,
> In their rude romping summer play,
> So thickly now the pasture crowd
> In gold and silver sheeted cloud,
> As if the drops of April showers
> Had woo'd the sun and changed to flowers."

The three kinds of buttercup are much alike; but this may at once be known by the sepals, which turn downwards. In old times it was called St. Anthony's Turnip; but if that pious hermit, whose name it bears, ever dined on its white hard roots, he must have dried them well first in the sunshine, to remove their acridity. In their fresh state they are not only pungent to the taste, but are emetic in their properties. Their expressed juice is said to cause sneezing, and it was formerly used for raising blisters, especially in cases of gout. The acrimonious principle is in some measure dispelled by drying, and is altogether lost if the roots are boiled. Swine are very fond of them, and will dig them up in the pasture.

15. **Creeping Buttercup** (*R. répens*).—Calyx spreading; flower-stalks furrowed; scions creeping; leaves divided into three leaflets, which are three-lobed, or three-cleft, and cut. Perennial. This plant, which the lover of flowers admires for its glossy cup, is a troublesome weed to the farmer, running all over the pasture by means of its creeping shoots, which take root wherever a leaf is produced. It is most abundant everywhere from June to August, blooming on, in shady places, as gardens and churchyards, till nearly winter. As it occurs in so many soils and situations, it assumes a great variety of appearances. When growing by the side of a river or on a marsh, it attains a height of three or four feet, with a stem sometimes as thick as a man's finger; whereas on a barren field its stem is not larger than a wheat-

straw. Its creeping roots, however, always characterise it, even when in gardens. Cattle reject it as food; but, like all the species, it loses its acridity in drying, and makes good hay. The Buttercup has several old English names, some of which, as King-cup, are retained in country places. Gold Cups and Gold Balls are names now almost forgotten; and if this flower is the "tufted crow-toe," which Milton wreathes in his garland for

"Young Lycidas, that hath not left his peer,"

then one of its old names is retained in the Crowfoot of modern days.

The French call the buttercup *Bouton d'or*, and it is the *Pie corvino* of the Italians. The Germans term it *Hahnenfuss*. Ben Jonson calls these flowers King-cups.

16. **Meadow Crowfoot** (*R. ácris*).—Calyx spreading; flower-stalks rounded, not furrowed; leaves three-cleft, their segments cut into acute divisions, those of the upper leaves very slender. Perennial. This species, which blooms from April to September, is, as its name imports, very acrid. Cattle only eat it when hungry; and Curtis says that if eaten by them in any quantity it will blister their mouths. He adds that he blistered his own hand by gathering it. The root of this species is long and fibrous; and this buttercup is common in meadows, pastures, and mountainous situations The common garden flower, with flat yellow rosettes, called Bachelor's Buttons, is a variety of this upright Meadow Crowfoot.

17. **Chervil-leaved Buttercup** (*R. chærophýllus*).—Sepals spreading, petals bright yellow; entire flower an inch to an inch and a half across; stem erect, simple, clad with silky hairs, and bearing one f[illegible]; base swollen, producing numerous little tubers and stout root-fibres. [illegible]ennial. This species is restricted (so far as the British flora is concerned) to Jersey, where it flowers in May. The leaves of the young plants are rounded or wedge-shaped, toothed or lobed, but those of older plants are divided into three leaflets, these again being cut up into wedge-shaped and toothed lobes. The seeds are rarely ripened in Jersey, and propagation is chiefly effected by the separation of the little tubers, as in the case of *R. ficaria*.

* * * * *Flowers yellow; leaves divided; carpels rough.*

18. **Pale Hairy Buttercup** (*R. hirsútus*).—Calyx reflexed; stem upright; many-flowered, hairy; leaves three-lobed, or three-cleft; lobes obtuse, cut; root fibrous. Annual. This plant is common in waste places, having paler flowers than the other buttercups, and it is smaller than either of them. The whole plant is of a paler green than either of the three species last named. It is in flower from June to October, and is sometimes found with double blossoms.

19. **Corn Crowfoot** (*R. arvénsis*).—Calyx spreading; stem erect, many-flowered; leaves three-cleft, the lobes generally again divided into three segments. Annual. This is easily known from all the other species, by its large prickly carpels. The flowers are small, and pale yellow. It is one of the most poisonous of its tribe, and is said to be very injurious to cattle, if, when pressed by want, they eat it. As it is not a plant of the pasture land, however, this does not often occur; but sheep have on some

1. LESSER CELANDINE
Ranunculus ficaria
2. WOOD CROWFOOT
Ranunculus aurieomus
3. CELERY-LEAVED CROWFOOT
Ranunculus sceleratus
4. BULBOUS BUTTERCUP
Ranunculus bulbosus
5. CREEPING BUTTERCUP
Ranunculus repens

Pl. 5.

occasions been killed by feeding on it. M. Bruynon, who tried some experiments with it, found that three ounces of its juice killed a dog in three or four minutes. It is in Norfolk called Hungerweed.

20. **Small-flowered Crowfoot** (*R. parviflórus*).—Stem prostrate; leaves hairy, three-lobed, and cut; flower-stalks opposite the leaves; calyx as long as the petals; seeds covered with hooked prickles. Annual. This plant is readily known from the other species by its prostrate stem, and little yellow blossoms, which are to be found from May to August, on dry banks in England sparingly, in Ireland rarely, and in the Channel Islands; but in Scotland it is not known to occur. One or two of its petals are often wanting.

6. Mouse-tail (*Myosúrus*).

Common Mouse-tail (*M. mínimus*).—Stem four to six inches in height; leaves erect and linear, fleshy; scapes slender, bearing a small greenish flower. Annual. This little plant, which is found in corn-fields and waste places, especially such as have a gravelly soil, is distinguished from any other British plant, by the arrangement of the ripe carpels into a slender form, resembling the tail of a mouse, and sometimes two or three inches long. This peculiarity is recognised not only in the scientific and English names, but in most of those by which it is known throughout Europe. In France it is commonly called *Queue de Souris*, and it is *Das Mäuseschwanzchen* of the German peasant, the *Cola de Raton* of the Spaniard, and the *Cora di sorcio* of the Italian. It is the only British species; and we have none of the genus in cultivation, but this little plant is known in most of the countries of the Continent.

7. Globe Flower (*Tróllius*).

Mountain Globe Flower (*T. europæus*).—Calyx of about fifteen concave erect sepals; petals shorter and narrower than the sepals, nearly as long as the stamens. Plant perennial. This flower is more frequent in gardens than in our country landscape, but it is not uncommon in mountainous places in the North of England, as well as Wales and Scotland, flowering in June and July. Its large blossoms are of a delicate yellow, and so globular in form that we wonder not that Conrad Gesner named the genus from *trol* or *trolen*, the old German word for a globe. This plant is also called by the Dutch *Trolbloem*. Some authorities derive the name from *Troll*, a malignant species of fairy. Our gardeners know it by the name of Globe Ranunculus, or Globe Crowfoot; and it is the *Lucken gowan* of the Scotch.

Our pretty globe flower is paler in colour than the wild species of Ranunculus, and its petals are not glossy like theirs, while the numerous stamens often spread around the centre so as almost to hide the petals. Miller tells us that the Globe Flowers are gathered in Westmoreland, with great festivity, by youth of both sexes, in the beginning of June, and that it is usual to see them return from the woods of an evening laden with these blossoms, with which they make wreaths and garlands to adorn their houses. If this custom is still in existence, it will probably soon be extinct, for the old floral usages of our country, the flower-strewings, and the well-dressings,

and the decking of houses and churches with wreaths, are almost over now; and even the garlands of May-days become fewer every year. The practice of dressing the "shrine where we kneel in prayer" with funeral or wedding chaplets, though one of high antiquity, was early preached against by the Fathers of the Church, as a custom of heathen people; yet in country places it was long continued, and even a century ago these wreaths of flowers were very general. A writer in the *Gentleman's Magazine* of May, 1747, treating of flower chaplets placed in churches, says: "About forty years ago these garlands grew much out of repute, and were thought by many to be a very unbecoming decoration for so sacred a place as the church; and at the repairing and beautifying of several churches where I have been concerned, I was obliged, by order of the minister and churchwardens, to take the garlands down, and the inhabitants were strictly forbidden to hang up any more for the future." He adds, however, that wreaths of flowers were long after carried at funerals, and placed on the face of the departed friend. That garlands were general on festive occasions our old poets abundantly testify; but after their discontinuance in the churches, their use in every way gradually lessened, till hardly a trace of it remained. Milton, in his "Comus," alludes to the ancient use of the chaplet of flowers:—

> "The shepherds at their festivals
> Carol her good deeds loud in rustic lays,
> And throw sweet garland wreaths into the stream,
> Of pansies, pinks, and gaudy daffodils."

This Globe Flower is our only British species; but various kinds from America, and different countries of Asia, are cultivated in our gardens.

8. Marsh Marigold (*Caltha*).

1. **Common Marsh Marigold** (*C. palústris*).—Stem erect, rooting or creeping; leaves kidney-shaped, their edges with rounded notches, calyx-leaves soon falling off. This flower, which is not of the form of a garden marigold, but which resembles a large thick buttercup, is very common on moist pastures and by the side of streams. It is one of our earliest blooming wild flowers, sometimes gleaming with golden beauty as early as February, and continuing for three or four months. It is the first flower of the meadows in Sweden and Lapland, and in the former country is called *Kalfleka*. It is very abundant and conspicuous in the northern lands of Europe, and in May gives quite a yellow tint to the fields. The French, who commonly call it *Le Souci d'eau*, term it in some provinces *Le Populage;* and the Italians give to it the poetic name of *Sposa del sole*. It is common in the moist fields of Germany, where it is known as *Die Sumpfdotter-blume;* and in Spain the peasant calls it *Hierba centella*. In some counties in England its rustic names are Water-dragon, Water-blob, or Horse-blob.

Old herbalists tell that the yellow tint of the Spring butter is owing to the cows having fed upon this plant; but it is not wanting in the acridity which characterises Ranunculaceous plants in general, and cattle only eat it when urged by hunger. Boerhaave said that it caused so much inflammation to animals eating it that they rarely escaped death. The young flower-buds, prepared with salt and vinegar, are used instead of capers; and the juice of

1 CHERVIL-LEAVED BUTTERCUP.
Ranunculus cærophyllus.

2 MUD CROWFOOT.
Ranunculus lenormandi.

3 RIGID-LEAVED WATER CROWFOOT.
Ranunculus circinatus.

4 WINTER ACONITE.
Eranthis hyemalis.

the flowers, boiled with alum, stains paper of a beautiful, though not a permanent, yellow tint. This flower was formerly much used for May garlands, and for forming wreaths to hang about cottage doors. A double variety, often cultivated in gardens, has been found in a wild state on Coldham Common, and in Grandchester Meadow, Cambridgeshire.

2. **Rooting Marsh Marigold** (*C. radicans*) is a rare species—or perhaps only a variety of *C. palustris*—restricted to Forfarshire. It is chiefly distinguished by its triangular leaves.

9. Hellebore (*Helléborus*).

1. **Green Hellebore** (*H. viridis*).—Stem few-flowered, leafy; leaves digitate; sepals spreading. Plant perennial. This plant is remarkable for the pale green tint of its flowers, which contrast with the rich dark green of its lower leaves. It prefers a chalky soil, and is not uncommon in woods, thickets, and hedges, in some places appearing to be truly wild, but more often the outcast of the garden. No wild flower, save the daisy and the chickweed, blooms so early in the year. Thus a little poem, called the "Song of February," says:

> "The crocus, the snow-drop, the starwort appear;
> The hellebore waited to see me and die,
> And sweet polyanthus peeps up at the sky."

The petals of this flower are modified into nectaries; they are tubular, and shorter than the calyx. Bees seem to be fond of the honey contained in them, and flies are often caught by it, and held as in a trap. This honey is said to be poisonous, and the nature of the plant renders it highly probable. The honey of some plants is well ascertained to be so. Such is the case with the dew-like drops which hang in the Crown Imperial, or which glisten on the flower of the Rhododendron.

2. **Stinking Hellebore** (*H. fœtidus*).—Stem many-flowered, leafy; leaves pedate; sepals converging. Plant perennial. This plant is often cultivated in shrubberies for its early flowers, which appear in February or March. It is also found in woods and thickets, though rarely, if ever, truly wild. It is about two feet high, with very bushy evergreen leaves, which are not divided to the centre, and sepals of pale green, edged with purple. Bishop Mant well describes it:

> "Within the moist and shady glade
> What plant, in suit of green array'd,
> All heedless of the winter cold,
> Inhabits! Foremost to unfold,
> Though half-conceal'd, its bloom globose,
> Whose petals green, o'er-lapp'd, and close,
> Present each arch'd converging lip,
> Embroider'd with a purple tip;
> And green its floral leaves expand,
> With fingers like a mermaid's hand"

This Hellebore is very fœtid and poisonous. Its dried leaves are sometimes given as medicine by country people, but great risk attends their use. The powdered roots mixed with meal are said to destroy mice.

This flower has the old names of Setter-wort, Ox-heal, and Bear's-foot. The Christmas Rose of the garden, whose clear white flowers open in the coldest season, is the *Helleborus niger*, the word *niger* alluding to its black roots.

10. Winter Aconite (*Eranthis*).

Common Winter Aconite (*E. hyemalis*).—Rootstock thick, perennial, creeping underground. Leaves round, divided into 3—5, lobed segments; long-stalked. Involucre of two lobed-bracts beneath the solitary cup-like golden flower, which is nearly an inch and a half across. The numerous stamens are longer than the small petals. This plant attains a height of about six inches, and flowers from January to March. It is not British, but a plant of Western Europe that has got naturalized in plantations here and there.

11. Columbine (*Aquilegia*).

Common Columbine (*A. vulgaris*).—Spur of the petals incurved; stem leafy, many-flowered; leaves nearly smooth; styles as long as the stamens. Plant perennial. "The wood-walks blue with columbines" are not to be seen in every part of our country. The flower, however, grows abundantly in many woods, and though doubtless often the outcast of a neighbouring garden, appears in most cases to be truly wild. This last remark applies chiefly to England, for in Scotland it is believed scarcely to occur, except as an introduction; and even in Ireland, where it is more plentiful, it is in most cases only naturalized. The Columbine is not so readily dispersed as some other flowers, and sometimes covers banks in great profusion, yet never spreads itself over the neighbouring fields. In Devonshire the Columbine is undoubtedly wild, in many places growing in great profusion, with blue, white, and pink flowers. Many of our old poets refer to this flower. Brown, in his Pastorals, names it while describing old floral customs long since discontinued, and known only by the poet's mention:—

> "So did the maidens with their various flowers
> Deck up their windows, and make neat their bowers,
> Using such cunning, as they did dispose
> The ruddy piny with the lighter rose,
> The monk's-hood with the bugloss, and entwine
> The white, the blue, the flesh-like columbine,
> With pinks, sweetwilliams; that far off the eye
> Could not the manner of their mixture spy;
> Then with the flowers they most of all did prize,
> With all their skill, and in most curious wise,
> On tufts of herbs or rushes would they frame
> A dainty border round the shepherd's name,
> Or posies make, so quaint, so apt, so rare,
> As if the Muses only lived there."

The Columbine is a well-known flower all over Europe, and in most countries of North America. Bryant speaks of it in the American woods where

> "The columbine, in purple drest,
> Nods o'er the ground-bird's hidden nest."

The French term this flower *L'Ancolie;* and it is *Die Akelei* of the Germans. The Italians call it *Acquilezia;* and another of their names, *Perfetto Amore* (True Love), seems to imply that it is a favourite flower. The Spaniards call the plant *Pajarilla*, and its old English name of Columbine was given from the resemblance of the blossom to a nest of doves. It

1 MOUNTAIN GLOBE FLOWER
Trollius europæus

2 MARSH MARIGOLD
Caltha palustris

3 GREEN HELLEBORE
Helleborus viridis

4 STINKING HELLEBORE
Helleborus fœtidus

Pl. 6.

flowers in June and July; and in spring its delicate leaves, half unfolded, tinged with pink, and wearing a grey-green bloom on their surface, are very pretty. The plant was formerly used medicinally, but it is by no means a safe medicine, and Linnæus says that children have died from taking it.

Michael Drayton introduces this flower in one of his poems:

> "Make her a goodly chaplet of azured cullambine,
> And wreath about her coronet with sweetest eglantine,
> Bedeck our Beta all with lilies,
> And the daintie daffadillies,
> With roses damaske, white and red, and fairest flower-de-lice,
> With cowslips of Jerusalem, and cloves of Paradise."

Chapman, however, alludes to some idea respecting the flower which is now unremembered:

> "What's that?—a columbine?
> No; that thankless flower grows not in my garden."

12. Larkspur (*Delphínium*).

Field Larkspur (*D. consólida*). — Stem erect, branched; flowers in loose racemes; petals combined; inner spur of one piece. Plant perennial. This flower is a doubtful native, though often growing in sandy or chalky fields. Professor Henslow remarks that, about Cambridge, at Quay, the hills are quite blue with it; and adds, that it also occurs with red, pink, and white flowers. It blossoms in June and July. It was formerly regarded as a most powerful vulnerary, and hence its specific name, from *consolidare*, to unite. Other praises it had, too, in former days; for Gerarde says of it, "The seed is good against the stinging of scorpions; and its virtues are so forcible, that if the herbe only be thrown before the scorpion or any venomous beast, it causeth them to be without force or strength, insomuch that they cannot stir or move, until the herbe be taken away." Our old herbalist, however, does not pretend to have witnessed its powers, but judiciously prefaces his account with "It is said." In his time the flower was called Knight's-spur and Lark-heel. The French term it *Pied d'Alouette*, as well as *La Dauphinelle;* the Germans, *Der Rittersporn;* and the Italians and Spaniards have also a reference to its spurred petals in their familiar names. Thus the former people call it *Speronella*, and the latter *Espuela de Caballero.*

There has been some confusion respecting the scientific name of this plant, which is the *D. ajacis* of Reichenbach. The *D. consolida* of Linnæus differs in several points, and does not occur in this country.

13. Monk's-hood (*Aconítum*).

Common Monk's-hood (*A. napéllus*).—Upper sepal arched at the back; spur of the nectary nearly conical; leaves stalked and 3-ternate; leaflets ovate, deeply cut and serrated. Plant perennial. There are some doubts as to whether this plant is truly wild, but it is to be found in places far from houses or gardens, and has, at any rate, been naturalized for some centuries. The author has received it from a lonely place in the Forest of Dean, in Gloucestershire; and it is found, though rarely, by the sides of streams and in woods. It grows in several places in Devonshire, and is described as flourishing in some profusion in a small meadow on the margin of a limpid stream near Ogwell

Mill. It appears truly wild by the side of the river Teme, in Herefordshire, and on some watery grounds in Somersetshire, near Wivelscombe. The plant is very conspicuous from its size, being often three or four feet high; the stem clothed with very minute hairs, and the dark-purple flowers appearing in June and July. It is very common in gardens, but should not be planted in those to which children have access, as its odour is noxious, and they are likely to select it for their play, on account of the fancied resemblance which the nectaries and side petals bear to a chariot drawn by doves. Some persons in delicate health have been injured by even smelling the flower in the open air; and others, on touching the eyelids after handling it, have experienced considerable pain and inflammation. Even the pollen of the stamens, if blown into the eyes, causes a dangerous affection. The root is most powerfully poisonous. A fatal instance occurred in the year 1853, in consequence of but a small quantity having been eaten in mistake for horseradish. Several well-authenticated cases are on record of people who, similarly mistaking the plant, have eaten it, and died in consequence. The stems and fresh leaves have also proved fatal, or caused mental derangement. In one case, in which a man became maniacal through eating it, the surgeon who attended him declared that the malady was not caused by the plant, and, insisting on eating some leaves in proof of his assertion, died in extreme agony. This case is recorded by Moræus; but a man of science ought to have known that the plant was deleterious, for the ancients had recorded it as amongst the most deadly poisons. One of its common English names alluded to its powerful effects on the wolf; but the Wolf'sbane of Switzerland is not so virulent as this species. It is well known that wolves and other wild animals have been killed by arrows dipped in the juice of aconite.

This plant blossoms in June and July. It had the old names of Helmet-flower and Friar's-cap; and the Dutch call it *Monnikskapper*, the Germans *Der Sturmhut*. It has been used with much success as a medicine, and its virtues have been greatly eulogised by Dr. Stoerck, a German physician. Linnæus, who mentions that criminals were formerly put to death by small doses of aconite, says that though it is fatal to kine and goats if they eat it in a fresh state, it is taken by horses without injury when dried.

14. Bane-berry (*Actæa*).

Bane-berry (*A. spicáta*).—Raceme of flowers long; petals as long as the stamens; leaves stalked, 3-ternate; leaflets ovate, deeply cut and serrated. Plant perennial. This rare plant, which has hitherto been found chiefly in Yorkshire, grows in bushy tracts on a limestone soil. It is stated to have been found near Ambleside and Sandwick, Ulleswater, in Westmoreland. The stem is one or two feet high; and both leaves and berries much resemble those of the elder-tree. The flowers are white, and open in May and June. The plant has also the name of Herb Christopher, and the name used by the Dutch has, too, a reference to this saint,—they term it *Kristoffelkruid*. In France it is known as *L'Actée;* and the Germans call it *Schwarzwurz*. The berries, which are poisonous, yield, when mingled with alum, a good black dye. The tubers of an American species are considered an efficacious remedy for the wound inflicted by the bite of the rattlesnake; hence that plant is one

1 COMMON COLUMBINE
Aquilegia vulgaris

2 FIELD LARKSPUR
Delphinium ajacis

3 MONKS-HOOD
Aconitum napellus

4 BANE-BERRY
Actæa spicata

Pl. 8.

of several which are known in America as the Rattlesnake-Herb. The Baneberry is not attractive enough to find a frequent place in the garden.

15. Peony (*Pæónia*).

Entire-leaved Peony (*P. corallína*).—Leaves twice-ternate, glabrous, their segments ovate, entire. Plant perennial. This plant ought not to be considered a wild flower, for it grows but in two places in this country, and was probably planted in both. The rock of Steep Holmes, an island in the Severn, has long been noted as one of its habitats. Sir William Hooker records Blaize Castle, near Bristol, as another, but it is not found there now. Gerarde says that in his days it grew near Gravesend; but it is impossible to determine whether the plant was a native of this country and has become eradicated from our wild flora, as some plants appear to have been, or whether it was introduced from gardens. The Rev. W. Lisle Bowles has some beautiful lines on this lonely Peony:—

"This, abrupt and high,
And desolate, and cold, and bleak, uplifts
Its barren brow! Barren, but on its steep
One native flower is seen, the peony,
One flower, which smiles in sunshine and in storm,
There still companionless, but yet not sad;
She has no sister of the summer field,
None to rejoice with her when spring returns;
None, that in sympathy may bend its head,
When evening winds blow hollow o'er the rock
In autumn's gloom! So Virtue, a fair flower,
Blooms on the rock of Care, and, though unseen,
So smiles in cold seclusion, while remote
From the world's flaunting fellowship, it wears,
Like hermit Piety, one smile of peace,
In sickness and in health, in joy or tears,
In summer days or cold adversity;
And still it feels heaven's breath reviving steal
On its lone breast, feels the warm blessedness
Of heaven's own light about it, though its leaves
Are wet with evening tears."

The seeds of this plant are said to be ground and used in tea by the Daurians and Mongols, who also boil the roots in broth; but it is probable that the more slender species, *Pæonia edulis*, is that which they thus use. Our wild Peony has red, pale pink, or white flowers, which appear in June and July. It differs from the common magnificent garden species, *Pæonia officinalis*, in its uncut leaves; those of the garden Peony being divided into lobes: the blossom is also single. The Peonies introduced from other lands are very ornamental, and some have much excited the attention of florists. The double red, which was brought from Switzerland to Antwerp at the end of the sixteenth century, sold for twelve crowns a plant; and we have only to look back a few years to the time when the Moutan-tree Peony was too expensive a flower for any but the rich man's garden. This is now comparatively a common plant, and is a truly beautiful species. Fortune, in his "Wanderings in China," describes his anxiety to procure some new varieties of this kind. Those already in England were either rose-coloured or white; and it was asserted by the Chinese near Shanghai, that varieties of the Peony

were to be found of purple, blue, and yellow tints. Our traveller scarcely believed this, but a Chinese artist assured him that he had seen flowers of these colours, and for a small sum made a drawing of them from memory.

These drawings were taken to the owner of a flower shop, who said that he must send for them to a distance of a hundred miles, and must charge the purchaser a high price. In due time the Peonies made their appearance; and though the blue was wanting, and the yellow flower had that tinge only in the centre of its white petals, yet there were beautiful lilac and purple blossoms. Mr. Fortune, however, had scarcely paid the high price when he found that the Chinese flower-seller had actually procured them at about a mile from the town.

The Greek legends told that the physician Pæon cured Pluto of a wound with the common Peony, and it is called after Pæon in almost every country in Europe. Our old poets termed it the Piny or Piony. The ancient Greeks seem to have held the plant in great repute: among other superstitious notions, they believed it to be of divine origin, and an emanation from the moon; they added that it shone during night, but its splendour is not so visible to modern eyes. No wonder that such a plant was reputed to drive away evil spirits, to avert tempests, and by growing near houses to protect them from all injury. Nor were all the absurd notions respecting the Peony confined to the ancients. In our own days anodyne necklaces are worn by children in villages, which are believed to aid dentition, and to prevent convulsions; and the beads are turned of the roots of one or other of the common Peonies.

Order II. BERBERIDÆ—BARBERRY TRIBE.

Sepals from three to nine in a double row, often coloured, soon falling off, surrounded by petal-like bracts; petals either of the same number as the sepals, and opposite to them, or twice as many, often with a gland at the base; stamens of the same number as the petals, and opposite to them; anthers 2-celled, and opening by a valve from the base upwards; ovary solitary, 1-celled, 1—3 seeded; fruit usually a berry. Shrubs, often bearing spines; or herbs, growing chiefly in temperate climates, often in mountainous regions.

1. BARBERRY (*Bérberis*).—Sepals 6; petals 6, with two glands at the base of each, within; stamens 6; berry 2-seeded. Name supposed to be from *berbérys*, which is the Arabic name for the fruit.

2. BARRENWORT (*Epimédium*).—Sepals 4; petals 4, with a scale at the base of each, within; pod many-seeded. Name of doubtful origin.

1. BARBERRY (*Bérberis*).

Common Barberry (*B. vulgáris*).—Racemes drooping; spines 3-cleft; leaves inversely egg-shaped, serrated, and edged with minute hairs. Plant perennial. This shrub when covered with its bright-red drooping clusters of fruit is very handsome, and often planted in gardens; nor is it uncommon in a wild state in woods and coppices, and on calcareous hills. It sometimes grows on old walls, as on those of Godstone Nunnery; and sometimes on the

Pl. 8.

banks of rivers, as on the borders of the Avon. The shrub is from three to six or eight feet in height, and the foliage has somewhat of a sea-green hue; the bark is of light colour, and the flowers, which are in pendulous clusters, are yellow, and appear on the shrub in June.

This plant was in former days called the Pipperidge-bush. The modern German name, *Der Sauerdorn*, is very expressive, for the foliage is slightly acid, and the fruit most powerfully so. The French call the plant, *L'Épine vinette*; the Italians, *Crespino*; and the Russians, by the name of *Barbariss*. The inner bark of the stem infused in beer is said to cure jaundice; and the boiled roots dye wool of a good yellow. The bark is so astringent as to be commonly used by the Poles in tanning leather; and they also dye this material of a beautiful yellow, by mingling some other ingredients with the bark. The fruits are so sour that birds leave their rich red clusters untouched; but the acid, which is of the nature of oxalic acid, renders the Barberry, when crushed in water, a pleasant and cooling drink in fevers; and it is also made into a good jelly. This fruit is used too by confectioners, for various sweetmeats, and makes an elegant garnish for dishes. The Egyptians consider it a valuable remedy in pestilential fevers, when macerated in fennel-water. The fruits of some Asiatic species are dried in the sun, like raisins.

The berries of our common Barberry are usually scarlet, but they are sometimes purple or pale yellow. The scent of the flowers, when borne to us by the winds from the distant shrub, is very fragrant, but it is disagreeable when too near. Insects of various kinds seem particularly partial to these blossoms, which are remarkable for the irritability of their stamens. Linnæus first recorded a fact now well known to botanists, and easily observed on any summer's day, that when bees, in search of honey, touch the filaments, the anthers quickly turn inwards, and discharge the pollen. The same effect is instantly produced by touching them with the sharp point of a needle, and is seen, not only in our native species, but in several others.

Dr. Gordon, of Hull, in one of his lectures, thus remarks on the irritability of the stamens of the Barberry: "The contractile effect in this case, as far as I have observed, is always much greater than the amount of the cause by which it is produced; and in experiments I have witnessed, that relaxation will take place at the same time that the mechanical cause which excited the contraction continues to be impressed. Moreover, the stamen of the Barberry can be made to contract even after it is cut from the flower, precisely in the same manner as the heart can be excited to action after it has been removed from the body."

There was formerly a strong prejudice amongst farmers against the Barberry shrub, because it was considered to injure the crops of wheat, even at the distance of a hundred yards from the spot. A small parasitical fungus, common on the foliage of the shrub, the *Æcidium berberidis*, was supposed to generate the dust which, carried from it by the winds, originated the minute fungus that causes the rust on wheat. This opinion must be erroneous, because the rust on corn is caused by the growth of *Puccinia graminis*, which is a totally different plant from the fungus on the Barberry. [In spite of the certainty prevailing at the time the above was written, that *Æcidium berberidis* and *Puccinia graminis* were entirely different species of fungi, more

recent investigation has proved beyond all doubt, not only that they are mere stages in the development of one species, but that the rust formerly known as a distinct species under the name of *Uredo* is an intermediate condition between *Æcidium* and *Puccinia*. It is true that the Barberry-bush is not to blame for the injury caused to the corn crop, but the farmers were warranted in their antipathy to it, seeing that it becomes the necessary, though involuntary, nurse of the farmer's enemy. *Æcidium* appears in spring upon Barberry leaves, and produces its spores (*æcidiospores*), which will only germinate on the leaves and stems of grasses, which, of course, include wheat, barley, etc. Here, after causing havoc among the tissues, they break out upon the surface and produce *uredospores*, which are capable of germinating on grasses again and producing fresh *Uredo* crops. Later they produce *teleutospores* (*Puccinia*), in which condition the plant rests for the winter, but in the spring the *Puccinia* gives rise to other spores, which will only germinate on the Barberry, producing *Æcidium* again.—E. S.] That the Barberry is not necessarily injurious to the wheat-field is proved by a communication sent by the well-known botanist, Mr. Charles Babington, to the *Magazine of Natural History*. This gentleman says, "As illustrative of the inaccuracy of this idea, a friend of mine residing at Bath mentioned to me, that during the last autumn, when walking round some corn-lands belong to one of his relatives, who lives in Wiltshire, his attention was particularly called to the very heavy crop in one of the fields, in the hedge adjoining which he at the same time observed *Bérberis vulgáris* in plenty. His relative was fully impressed with the idea of the destructiveness of Berberis, and not being a botanist, did not know that it grew there. I may add that the wheat from that field, on being thrashed, completely answered the expectations raised by its fine appearance."

Our common Barberry is wild in most European countries. Mr. Lyell, in his "Visit to the United States," remarks of this plant on the banks of the Piscataqua: "The Barberry, also, though not indigenous, is very abundant and ornamental in the woods here. It has overrun, in modern times, the shores of New England, and made its way many miles inland, to the great annoyance of the agriculturists. Some naturalists wonder how it can spread so fast, as the American birds, like the European ones, refuse to feed on its rich berries; but if it be true that cattle, sheep, and goats occasionally browse upon this shrub, there is no mystery as to the mode of its migration." Sheep are said to be very fond of it in this country.

2. Barrenwort (*Epimédium*).

Alpine Barrenwort (*Epimedium alpinum*).—Root-leaves none; stem-leaf twice ternate; leaflets heart-shaped, serrated, and hairy beneath; nectary yellowish, resembling an inflated membrane. Plant perennial. This elegant little Alpine plant is by no means frequent, and it is certainly not truly indigenous, though it grows in some mountainous woods in Scotland and the north of England. Each stem bears a single delicate leaf; and in May its panicle of flowers is of a dull purple colour. Sir W. J. Hooker and Dr. Arnott mention, that when seen under a microscope, the anthers of this plant exhibit a singular structure, being formed of two valves, which on opening spring upwards, and suffer the pollen to escape. The French term this

1 COMMON BARBERRY
Berberis vulgaris

2 ALPINE BARRENWORT
Epemedium alpinum

Pl. 10.

plant *Le Chapeau d'Evêque;* and in other countries besides it has received a name from the fancied resemblance which its petals bear to a clerical hat,—for the Germans call it *Bischofsmütze.* It is the *Mulljesbloem* of the Dutch, and the *Epimedio* of the Italians and Spaniards; while this, or a similar species, is known to the Japanese by the name of *Ikaniso.* It has been found in Bingley Woods in Yorkshire, about Glasgow and Edinburgh, and on Carrock Fell and Skiddaw, Cumberland.

Order III. NYMPHÆACEÆ—WATER-LILY TRIBE.

Sepals 4—6, gradually passing into petals, and then into stamens, all being inserted on a fleshy disk, which surrounds the ovary; stigma sessile, rayed; berry many-celled, many-seeded. Aquatic herbaceous plants, remarkable for their large and beautiful flowers, which are in tropical lands very fragrant, and of brilliant tints. They have large, floating, peltate, or heart-shaped leaves. Several have nutritious roots, which are eaten either roasted or boiled; and their seeds contain a large quantity of starch. That celebrated plant, which has occupied so much attention, and been so successfully cultivated at Chatsworth and Kew—the *Victoria régia*—is not only the largest of Water-lilies, but the largest aquatic plant known, and a vegetable wonder. M. Schomburgk, who first discovered it on the Berbice, thus characteristically describes it: "A gigantic leaf, from five to six feet in diameter, salver-shaped, with a broad rim of a light green above, and a vivid crimson below, rested upon the water; quite in character with the wonderful leaf is the luxuriant flower, consisting of many hundred petals, passing in alternate tints from pure white to rose and pink. The smooth water was covered with them; I rowed from one to another, and observed always something to admire. The leaf on its surface is of a bright green; in form, orbicular, with this exception—opposite its axis it is slightly bent in. Around the margin extended a rim, about three to five inches high, on the inside light green, on the outer part bright crimson." The upper portion of the stem is an inch thick, and is studded with sharp prickles about three-quarters of an inch in length, and the blossoms fifteen inches in diameter. But it is not the tropical waters only which have the beautiful lilies—the Lotus flowers—for some of the species are found in temperate and even cold climates, some of the *Nymphææ* lying in abundance and beauty on the surface of the crystal lakes in Norway. The roots of *Nymphæa lotus* are very much prized as food; and the *Victoria regia* has been called the Water Maize, from its nutritious and prolific seeds. The East Indian *Nelumbium*, which abounds in all the hotter countries of the East, and with which the ditches about Pekin are literally choked, is thought to have been the Sacred Bean of Pythagoras, which was the object of religious veneration in Egypt, and which the priests were commanded not to look upon. Its singular seed-vessels, in whose cells lie the bean-like seeds, are thought to have originated the Cornucopia of the ancients.

1. WATER-LILY (*Nymphæa*).—Sepals 4; petals inserted on a fleshy disk. Name from its growing in places supposed to be the haunts of the Nymphs or Naiads.

2. YELLOW WATER-LILY (*Núphar*).—Sepals 5; petals inserted on the receptacle. Name of Arabic origin.

1. WATER-LILY (*Nymphæa*).

Great Water-lily (*N. álba*).—Leaves cordate, entire; stigma of 16 ascending rays. Plant perennial. The waters which run their silvery course through our meadows, or lie in quiet lakes amid their greenness, bear some of the loveliest of our native flowers. Those who have marked the rich vegetation of tropical countries tell us that nowhere are they so much reminded of their luxuriance as when they gaze on a stream with its margin decked with tall blossoms, and its little islets of emerald grass and glowing wild flowers. Beautiful as are many of our aquatics, yet this Water-lily, with its rose-like sculptured cup of alabaster lying among its glossy bright-green leaves, is without question queen of the waters.

Except among the Composite Flowers, we have besides this scarcely any plants which can be said to bear a double or semi-double blossom; a circumstance which renders the wild-flower nosegay far less durable than that gathered from the garden; yet while the blossoms are often on this account less showy, their consequent lightness contributes to the grace of their attitudes, and of the motion communicated to them by the passing winds. But our Water-lily, with its numerous pure-white petals, looks like the flower of some warmer region, and has been justly said to vie in beauty with the Magnolia of India, though its fragrance is but faint in comparison with the odour of that plant. Some of our quiet secluded streams are one mass of white and green in June and July. The author has seen large pieces of water in Essex almost covered with the lilies; but, as Baxter remarks, the flower is seen nowhere in greater perfection than in the vicinity of Oxford, where it grows over the surface of almost every pond, deep watery ditch, and slow river. The Ouse yet bears its rich masses of the flower, as it did when Cowper wandered by its side, and, wishing for the lily, had his longing gratified by the affectionate instinct of his spaniel. The spot where "Beau" dashed into the stream to seize the flower is still pointed out. It is close by a bridge called Goosey Bridge, and beautiful Water-lilies lie there on their broad leaves as of yore. The gentle poet has long since quitted the scene which his humble piety adorned; but both verse and flower remain to remind us of his simple tastes and pleasures, and of his pure and elevated feelings, when, years ago—

> "The noon was shady, and soft airs
> Swept Ouse's silent tide;
> And, 'scaped from literary cares,
> He wander'd by its side.
>
> "It was the time when Ouse display'd
> His lilies newly blown;
> Their beauties he intent survey'd,
> And one he wish'd his own."

The Cherwell has long been celebrated for its Water-lilies, and Mr. Noel, in his beautiful little poem, entitled "A Thames Voyage," thus refers to them:—

1. WHITE WATER LILY
Nymphæa alba

2. COMMON YELLOW WATER LILY
Nuphar lutea

3. LEAST YELLOW WATER LILY
Nuphar pumila

Pl. II.

" And in bays where matted foliage weaves
A shadowy arch on high,
Serene on broad and bronze-like leaves
The virgin lilies lie.

" Fair fall those bonny flowers ! oh how
I love their petals bright !
Smoother than Ariel's moonlit brow
The water-nymph's delight !

" Those milk-white cups with a golden core,
Like marble lamps that throw
So soft a light on the bordering shore,
And the waves that round them flow."

The " waves " of the poet must be only tiny wavelets, however, for the Water-lilies would not flourish where the river was rapid. The blossoms are said by some botanists to close and sink beneath the surface in the evening and night. They are certainly fully open only during day ; but their folded flowers still gleam in white contrast with their leaves, like alabaster vases, on the surface of the stream, long after it has begun to glisten beneath the silver rays of the moon.

The large leaves of the Water-lilies evolve oxygen gas copiously, and the flowers emit a slight odour. Some foreign species are far more powerfully scented ; and Mr. Gardner, when in Brazil, saw two white Water-lilies on a lake, one of which was deliciously fragrant, while the other had the scent of coal-tar.

The root-stocks of this plant are said by Fée to be better than oak-galls for dyeing grey ; and they have also been employed with advantage in tanning leather. These roots, which have a very bitter and astringent flavour, are used both in Ireland and the Scottish Highlands to dye dark-brown or chestnut colour ; and both root and leaf were formerly employed in medicine. Kine refuse to eat the plant, but it is said to be readily devoured by swine, which tear up the Water-lilies in the most destructive manner, to get at the roots. This flower is sometimes called Water Rose ; and well deserves the name given by the Hindoos to an Indian lily—the Delight of the Waters. The French call it *Le Nenuphar ;* the Germans, *Die Seeblume ;* and in Holland, where the Water-lily is plentiful, it is called *Plomper*. The Water-lilies of India, and also of Africa and America, are many of them of a rich rose colour, and others vary in all the shades of light blue to white. The roots are chewed by singers in India, to clear the voice. In Japan, where the White Water-lily is an emblem of purity, artificial lilies, cut out of white paper, are carried at funerals on long poles before the departed, and flowers are gathered from the stream and placed on the face. The people of Greece and Turkey make a pleasant drink from the blossoms. A variety of the common Water-lily is occasionally found with small flowers.

2. Yellow Water-lily (*Núphar*).

1. **Common Yellow Water-lily** (*N. lútea*).—Stigma with 10—30 rays, which do not extend to the margin ; leaves cordate. Plant perennial. Not nearly so beautiful as the white species, but far more common, is the

Yellow Water-lily, which has a very thick cup-like blossom. It floats, during June and July, on many of our streams, ponds, and rivers; but it is so succulent that it is impossible to dry it for the herbarium so as to retain anything of its original appearance. It has a strong odour, too powerful for a room, but pleasant enough when borne on the winds with the fragrance of the mint, and the delicate scent of the green herbage; and we have sometimes thought it delicious as we have sat by the stream where were abundance of

> "The water-lilies, whose broad leaves
> Make green and sunny islets in the pool,
> For golden flies on summer days to haunt,
> Safe from the lightning-seizure of the trout;
> Or yield their laps to catch the minnow springing
> Clear from the stream, to 'scape the ruffian pike,
> That prowls in disappointed rage beneath,
> And wonders where the little wretch found refuge."

There is a strong scent of brandy in the flower, and this, as well as the shape of its seed-vessels, has led to its familiar name of Brandy-bottle; while the leaves, which when half unfolded are rolled into green slender vase-like forms, have procured for it the name of Water-can. The Turks and Arabs are very fond of the Water-lilies, and deck the festive table with their flowers. They also make a pleasant liquor from them, which they call Pufer, a corruption probably of the old Arabic name of the flower, Noufar; and when the Arab raises the Pufer-vase to his lips, his companions say to him, "May it benefit thee!" while he in return exclaims, "Praise be to God!" and, passing the liquor onwards, adds, "May God benefit thee!"

The glossy leaves, over which the water runs as over oiled cloth, are said to be styptic. The thick and succulent stems are bitter and astringent; the whole plant contains a quantity of starch; and the seeds, which taste like those of the poppy, are eaten by the natives of many countries in which these lilies grow, and are often partaken of by travellers who share in Eastern hospitality. The rootstocks of several of the Water-lilies are highly esteemed by the negroes of Senegal, who roast and eat them like potatoes; and in India the farinaceous seeds are sometimes boiled, or are roasted in heated sand, or they are eaten raw like millet. The roots of the yellow species are in Sweden, during seasons of scarcity, pounded into cakes, along with the inner bark of the Scotch fir.

The Yellow Water-lily is a native of almost all parts of Europe, as well as of America and many parts of Asia. Linnæus says that the flowers, as well as roots, are eaten by swine, though refused by most animals. He also adds that cockroaches are destroyed by the roots, bruised and mingled with milk, and that a similar preparation will kill crickets.

2. **Least Water-lily** (*N. pumila*).—Stigma of 8—10 rays, which extend beyond the margin; leaves cordate. Plant perennial. This lesser Water-lily, which blossoms in July and August, varies little from the last-named species, though smaller in size. It is doubtful if it is essentially distinct from it, the most marked difference being in the toothed edge of the stigma, the rounder petals, and the shorter anthers. It grows in several of the Highland lakes; at Mugdock, near Glasgow; and Ellesmere, Salop.

Order IV. PAPAVERACEÆ—POPPY TRIBE.

Sepals 2, soon falling off; petals 4; ovary 1. Stigma rayed, or lobed; capsule 1-celled, many-seeded; seeds inserted on incomplete partitions, which radiate from the sides of the seed-vessel, but do not meet at the centre. Herbaceous plants, many of which are the pest of the corn-fields, and have been disseminated with grain all over the world. They all possess, in a greater or less degree, a narcotic principle, which renders some very valuable as medicines; and the seeds of all the British species contain a mild and wholesome oil.

1. POPPY (*Papáver*).—Stigma sessile, rayed; capsule opening by valves beneath the stigma. Name from Papa, the Celtic word for pap, because given to infants with their food as a narcotic.

2. WELSH POPPY (*Meconópsis*).—Style short; stigma of few rays; capsule opening by valves below the style. Name from the Greek words *mekon*, poppy, and *opsis*, a resemblance.

3. HORNED POPPY (*Glaúcium*).—Stigma 2-lobed; capsule pod-like, 2-celled, 2-valved. Named from the glaucous or sea-green hue of its foliage.

4. CELANDINE (*Chelidónium*).—Stigma 2-lobed; capsule pod-like, 1-celled, 2-valved; seeds crested. Named from *Chélidon*, a swallow; probably because it flowers at the time of the coming of that bird.

1. POPPY (*Papáver*).

* *Capsules bristly.*

1. **Long Rough-headed Poppy** (*P. argemóne*).—Capsule club-shaped; bristles erect; stem leafy; leaves twice pinnatifid. Plant annual. This is a common flower in our corn-fields, during June and July; and though neither so large nor so richly coloured as the common Scarlet Poppy, is a conspicuous object among corn. The petals are of somewhat pale scarlet, with a black spot at their base. The name of Argemóne, from *argos*, slothful, was formerly given on account of the narcotic effect of the Poppy; and there is still a genus called by that name, though we have no British species belonging to it. Our Rough-headed Poppy has the narcotic principle in its capsules; and Burnett says that even the foliage partakes of it in some degree, and that it is sometimes boiled and eaten. The Mexican Argemóne, which is an allied plant, is called by the Spaniards *Fico del Inferno*, on account of its powerfully narcotic effects, and the prickly capsule, which renders it so troublesome a weed; and they use it as a cure for ophthalmia, and extract from its seeds an oil, with which they polish their furniture. It is used by the native doctors of India as a substitute for ipecacuanha.

Our readers unaccustomed to botanical investigations, but who often see the countless thousands of brilliant Poppies colouring the fields, would be surprised to find that they are not truly indigenous to our soil. There is not a doubt that we owe many of our apparently wild flowers to the cultivation of the land, since we find them only on cultivated spots; and that if the land were long left neglected, they would gradually disappear from it. "When," says Professor Henslow, "I mention our common field Poppies as not exempted from all suspicion of an exotic origin, it will be supposed that I am stating an

extreme case; and yet I question whether some, if not all the species of the genus Papaver (of Decandolle) would not ultimately disappear from our native flora, if the whole kingdom were abandoned to the uncultivated state from which it has been reclaimed for so many generations. I scarcely remember to have seen a specimen of a true Papaver in an uncultivated district, unless *P. argemóne* be an exception." Several of our Poppies have followed the Englishman in colonization, and their scarlet flowers wave above the fields of Australian corn, and are as unwelcome to the agriculturists in that land as in ours.

2. **Round Rough-headed Poppy** (*P. hýbridum*). — Capsule nearly globose; bristles spreading; leaves twice pinnatifid. Plant annual. This plant is by no means frequent, but is found on some chalky or sandy corn-fields, in June or July. Its flower is of deep scarlet. It is more often seen in the southern counties of England; in Scotland it does not occur.

* * *Capsules smooth.*

3. **Long Smooth-headed Poppy** (*P. dúbium*).—Capsule oblong; bristles on the flower-stalks, closely pressed to them; leaves sessile, and once or twice pinnatifid. Plant annual. This scarlet flower is not unfrequent in corn-fields during June and July. It is very handsome, though its broad petals are of paler scarlet than those of the common Red Poppy, and the blossom is not so large.

4. **Common Red Poppy** (*P. rhœas*).—Capsules nearly globose; bristles spreading; leaves pinnatifid, cut. Plant annual. The farmer cannot praise our common Poppy, but the lover of beauty rejoices in its grace, and in the richness of scarlet tint which harmonises so well with the verdure around it. A black spot often stains the base of its petals, and its foliage is of bright green. Country people call the plant Corn-rose, or Red-weed, or Headache, and Cheese-bowl; the French term it *Le Pavot, L'Œillette*, and *Le Coquelicot*. It is *Der Mohn* of the German farmer, and the *Maankop* of the Dutch; while this, or some similar species, is the *Papavero* of the Italian, and the *Adormidera* of the Spaniard. Though so common in England, it is rare in the West of Scotland. It is easily distinguished from the Long Smooth-headed species, which often grows with it, both by its short capsule and by the spreading hairs of its flower-stalks. Agnes Strickland enumerates it among her "Flowers of the Corn-field":—

> And we'll pause and gather a glorious wreath
> From the flowers that are shelter'd the corn beneath:
> There are velvet campions, both white and red,
> And poppies, like morning-glories spread,
> That flash and glance with their scarlet sheen,
> The bending ears of the wheat between;
> And mark, when it bows to the breeze's sway,
> How it shows the cockle in rich array,
> And the lowly bind, with its delicate tinge,
> And the azure succory's silken fringe;
> The modest scabious, of meeker blue,
> And silvery galium, of virgin hue;
> The gay fluellin, and ox-eye bold,
> And their gaudy neighbour, the marygold.

This poppy is cultivated in France and Germany for the oil expressed

1 LONG ROUGH-HEADED POPPY
Papaver argemone

2 ROUND ROUGH-HEADED POPPY
Papaver hybridum

3 LONG SMOOTH-HEADED POPPY
Papaver dubium

4 YELLOW HORNED POPPY
Glaucium luteum

5 GREATER CELANDINE
Chelidonium majus

Pl. 12.

from its seeds: the oil is not narcotic, but is consumed very generally on the Continent instead of olive oil. Its use was, at one time, prohibited by the laws of France, much popular and unreasonable clamour having been excited against it; but it is now openly sold, and is often mixed with olive oil. The seeds are also used in Poland and Russia as an ingredient in soups and gruel. It was called *rhœas*, from the Greek word "to flow," or "fall," in allusion to the fugacious nature of its petals. Cybele, the mother of the gods, wore a crown of Poppies, the numerous seeds being an emblem of fertility. Brantz Mayer mentions a singular usage connected with the Poppy among the Indian population which pours into Mexico from the Lake. "Scarcely an afternoon passes in Lent that the observer will not find the canal covered with gay boat-loads of Indians, passing homewards from market, dancing, singing, strumming the guitar, and crowned with wreaths of poppies." "I do not," he adds, "know the origin of the custom of wearing this forgetful flower, but it is both a healthier and more poetic oblivion than that resorted to by many people of other lands after a day of toil."

5. **Opium Poppy** (*P. somniferum*).—Capsule nearly globose; whole plant smooth, and of sea-green tint; leaves clasping the stem. Plant annual. The solitary white poppy, standing here and there among the green blades of corn in July and August, is a very beautiful flower. Sometimes it is of most snowy whiteness, with a deep purple spot at the base of its petals; at other times the whole flower has a delicate or a deeper tinge of lilac. But it is when cultivated in fields that its beauty is most remarkable, for there, nodding to the summer winds, the large flowers look like balls of down waving up and down in graceful motion. There is reason to doubt if this flower is ever truly wild, for although it is apparently so in some parts of England, yet it has probably been introduced with the grain into the cultured field. Plentiful as it is in the wild spots of Southern Europe, yet in all probability it is not indigenous even to that soil, but was brought thither from Asia. It was early cultivated in Greece, at first for the sake of its seeds, which were used as food, and which in modern times are much employed in Eastern confectionery and sprinkled over cakes. It was also grown in early days very generally in the states of Europe, and now it is a beautiful garden flower, for on the parterre it displays a great variety of rich and delicate tints, while its petals still preserve the thin and fragile and crumpled character of the Poppies in general. Ancient Latin sages tell how it grew in the Roman garden of Tarquinius Superbus, and served the haughty monarch as an emblem by which to shadow forth his coming tyranny. Charlemagne thought it worthy a place in his Capitularies; and the god of slumber was early figured as reclining on the mass of its snowy flowers, and holding them in his motionless hand. Since those days how many thousands have been influenced by the juice of the Poppy! Some lulled to the refreshing slumber in which pain was for a while soothed or forgotten; some given up to those wild visions and restless agitations, which have ended by paralyzing alike all bodily powers and moral energies!

The fields of White Poppy which occasionally ornament our own landscapes are chiefly planted either for the sake of the capsules—which are a valuable external remedy in cases of pain—or for the seeds, which, though

they are wanting in the narcotic principle possessed by the capsule, yet yield an excellent mild oil, sometimes used to adulterate that of the olive. It is said that as good an opium may be procured from the Poppy in England as from that grown in warmer regions, but the expense of its culture here renders it more costly than that produced in Turkey or India. All parts of the plant contain a white, opaque, narcotic juice, but this abounds especially in the capsules. These, being the parts for which our Poppy is cultivated in England, are gathered as soon as ripe, and brought to market in bags, chiefly from parts of Surrey and Kent.

In warm climates this white juice is in far greater abundance, and the whole plant attains a greater luxuriance. When grown for opium, incisions are made in the capsules of the Poppy, when about half ripe, and the juice thickens in the night to a firm grey substance. The mode in which opium is now gathered in the East is precisely the same as that described so many centuries since by Dioscorides. Incisions are made, at sunset, and the dews of night favour the exudation of the milky substance, which is scraped off on the following morning by women and children. After being thickened by stirring in the sun, it is shaped by the hand into cakes. In the opium shops of Constantinople it is mixed with rich syrups made of various fruits, in order to render it a sweetmeat; or it is formed into small lozenges, on which are impressed the words "Mash Allah"—the work of God. The Tartar couriers, who travel immense distances with astonishing rapidity, often take no other nourishment than a few of these small lozenges. The celebrated Maslach, or Mash Allah, of the Turks, is believed, however, to contain other narcotic substances besides the opium, and the juice of the hemp is probably mingled with it. Of the uses of opium to the sufferer from pain and restlessness we need not speak. Many who have ministered by the couch of pain have blessed God for its soothing influences; and all who are familiar with the records of Eastern travel know how often that blessing is perverted into a curse, when the continued use of opium has weakened the limbs and shortened the life of man, and degraded an intellectual being to the state of imbecility.

2. Welsh Poppy (*Meconópsis*).

1. **Yellow Welsh Poppy** (*M. cámbrica*).—Capsule ribbed; leaves mostly stalked, pinnate; the leaflets pinnatifid. Plant perennial. This Poppy opens its large yellow blossoms to the sunshine of June and July, but it is a rare flower. It grows on rocks, or in shady places; and sometimes enlivens some crag or heap of stony fragments in Westmoreland or Devonshire. It is found on the Cheddar rocks, with some other rare flowers, which the wild winds have carried thither. It is easily known from most of our Poppy tribe by its golden petals; the Horned Poppy alone of our British species sharing this colour with it. It is much more slender than that plant, however, and much more in form resembling our scarlet field Poppies, and its foliage is of a rich grass-green. It abounds in a yellow juice.

3. Horned Poppy (*Glaúcium*).

1. **Yellow Horned Poppy** (*G. lúteum*).—Leaves very rough, embracing the stem, waved, and of pale sea-green hue; pod roughish, with minute

1 OPIUM POPPY
Papaver somniferum

2 COMMON RED POPPY
Papaver rhœas

3 YELLOW WELSH POPPY
Meconopsis cambrica

4 VIOLET HORNED POPPY
Glaucium violaceum

Pl. 13.

tubercles, cylindrical, and from 6 to 10 inches long. Plant biennial. Our sea-beaches have mostly a barren aspect, for flowers and trees are scarce upon them. Here and there a little patch of green enlivens them, or a wild flower springs up among them, but these are few and far between. The Yellow Horned Poppy is decidedly their greatest floral ornament; and it grows so near to the sea, that in winter the high waves almost reach its clumps of evergreen foliage, and little balls of snowy spray linger among the leaves. From June to August its yellow blossoms quiver before the breezes, from stony beach, or sand-hill or cliff, or whatever soil forms the ocean's margin, unless it be the salt marsh. Few objects are more beautiful on an early summer morning, when all the minute points of its rough leaves are beset with the pearls of dew, and the sickle-like pod waves above the newly-expanding blossom. According to the Greek mythology, Glaucus was the name of a fisherman who leaped into the sea, and "by transmutation strange" became a sea-god. Hence, too, the word "glaucous," which is commonly used by botanists to express the pale sea-green colour of the foliage of many plants growing near the sea, and the pale-green powder with which they are covered, as is the plum with its bloom. Agnes Strickland has described some of the flowers which deck the verge of the ocean :—

"The wild sea cliff, though rude it be,
Is wreath'd with many a flower,
That blossoms there unscathed and free,
Through storm and shower.

"There bright as gems of fairy lore,
Or Eastern poet's dream,
The horned poppies gild the shore
With sunny gleam.

"The red bind to the barren soil
Clings safe 'mid all alarms,
While drowning seamen faintly toil
With fainting arms."

Older poets told, too, of the Horned Poppy, and the powers which the superstitious believed it to possess. Ben Jonson, in the Witches' Song, says,—

"Yes, I have brought to help our vows
Horned poppy, cypress boughs,
The fig-tree wild that grows on tombs,
And juice that from the larch-tree comes."

The light of Revelation, which has dawned on every British village, and brought its teachings to hall and cottage, has dispelled fancies and practices which were sanctioned in other times, and none dream now of gathering the Poppy for incantations. It is very acrid in its nature, and was formerly used as a medicine in various disorders. It has a dark-yellow spindle-shaped root, like a small carrot in appearance, but having no resemblance to it in its mild and nutritious qualities; and it is said, if eaten, to occasion madness.

2. **Scarlet Horned Poppy** (*G. phœniceum*).—Pod hairy; stem-leaves deeply pinnatifid and cut; stem hairy. Plant annual. This flower, which has the long pods that led him who first named the genus to designate it Horned, is in blossom in June and July. It is a showy scarlet flower, with

a black spot at the base of its petals. It is not a native plant, though it has been recorded as growing in Norfolk and in Portland Island.

3. **Violet-coloured Horned Poppy** (*G. violáceum*).—Pod erect and three-valved, hairy near the summit; leaves rough with bristly hairs thrice pinnatifid, the segments linear. This flower is easily known from all our other wild Poppies by its violet-blue petals. It is a very lovely but a very rare plant, occurring in chalky corn-fields, in Norfolk and Cambridgeshire, in May and June. This poppy is so nearly allied to the genera *Chelidonium* and *Papaver*, that it has by various botanists been classed in one of these. Recent writers, however, make it a distinct genus, and call it *Rœméria*, which is the name given to it by Decandolle. J. J. Rœmer, after whom it was called, was a Professor of Botany at Landshut, and assisted Schultz in an edition of the "Species Plantarum of Wildenow:" he died in 1820.

4. Celandine (*Chelidónium*).

C. május.—Pod linear, one-celled, and two-valved; leaves pinnate, with about five leaflets, which are broadly ovate, lobed, and cut and notched at the edges with rounded notches. Plant perennial. This plant has no affinity with Lesser Celandine, which, as we have stated before, is a species of *Ranunculus*. It is very common on old walls, among ruins, and waste places; and is one of the herbs which follow man, and are more often found near his dwellings than in secluded places. It is about two feet high, slightly hairy; its foliage of bluish green, and its flowers, which are of a dull-ochre yellow, appear in April, and are in blossom till October. They are smaller than any other of the poppy tribe. The stems are brittle, and full of a thick yellow juice, which is used in villages as a cure for warts. It is of very acrid properties, and is a violent poison, though Dr. Withering remarked of it, that a medicine of so much activity would some day be converted to important uses. It is now employed by oculists very successfully in operations on the cornea, and has long been known in villages as a remedy, when diluted with milk, against thick spots in the eye. Pliny, whose large book of wonders is called by Disraeli, an "awful repository of all the errors of antiquity," has recorded the discovery of the virtues of this plant, which he says was made by the swallows, who anointed the eyes of their young ones with its juices. Our great naturalist, John Ray, however, who rejected the absurd notions about plants so prevalent in his time, even among scientific men, yet thought very highly of this mighty tome of the great Roman naturalist, and considered it as a vast treasury of learning. Although we cannot give credit to the science of the swallow, yet from earliest ages this orange juice of the Celandine was applied both to eyes and heads as a remedy; hence the flower is called by the old herbalists both Swallow-wort and Tetter-wort; and most of the continental names refer to the swallow. The plant is *La Chélidoine* of the French, *Das Schölkraut* of the Germans, the *Schelkruid* of the Dutch, and the *Svaleurt* of the Danes; while both the Spaniards and Italians term it *Celidonia*. According to Loureiro, its juice is greatly esteemed by the natives of Cochin-China, as a medicine for a variety of maladies.

Order V. FUMARIACEÆ—FUMITORY TRIBE.

Sepals 2, deciduous; petals 4, irregular, and more or less united and swollen or spurred at the base; stamens 6, in two bundles; ovary 1-celled; style threadlike; stigma lobed; seed-vessel 1 or more seeded; seeds shining. Herbaceous plants, closely allied to the poppies, but having a watery and not milky juice. They are scentless and slightly bitter. They are found chiefly in the temperate latitudes of the northern hemisphere, in thickets and waste places. Two are found at the Cape of Good Hope.

1. CORÝDALIS.—Petals 4, one of which is spurred at the base; seed-vessel many-seeded. Name, the Greek word for Fumitory.

2. FUMITORY (*Fumária*).—Petals 4, more or less united, one of them swollen at the base; seed-vessel 1-seeded. Name from *fumus*, smoke.

CORÝDALIS.

1. **White Climbing Corýdalis** (*C. claviculáta*).—Stem much-branched, climbing; leaves pinnate; leaflets elliptical and entire, the leaf-stalk terminating in tendrils. Plant annual. This plant, which is found in some shrubby and bushy places in England where the soil is stony or gravelly, is very abundant in Scotland, and especially in the Highlands, where it grows on old walls or on the roofs of cottages, among stonecrops, houseleeks, the short brownish-green cushion moss, and the scaly crusts of the lichen called the orange parmelia. The Corýdalis is long and straggling, very delicate in texture and appearance; and its flowers, which are pale yellow, almost white, bloom in June and August in small clusters. When growing among the underwood, its tendrils enable it to climb to a distance of some feet. Several species of Corýdalis are favourite garden flowers, and they have mostly yellow or purple blossoms. They are easily cultivated, and are pretty ornaments of rockwork. Some of the most elegant of the genus grow wild in North America.

2. **Solid-rooted Corýdalis** (*C. sólida*).—Stem erect, and without branches or tendrils; a scale beneath the lower leaf. Leaves 3—4, twice ternate, their leaflets wedge-shaped or oblong, and cut; root solid and tuberous. Plant perennial. The flowers of this species are purple, and much larger than those of the white-flowered Corýdalis. The plant blossoms in May and June, and is sometimes admitted into the garden, where, at one time, it was quite a favourite. It is nowhere a native of Britain, and many of the habitats recorded for it are spots on which gardens were once cultivated, and where still "many a garden-flower grows wild." It is a native of Europe. Its foliage is of bluish green, and its roots abound in starch, which is used by the Kalmucs for their winter food.

3. **Yellow Corýdalis** (*C. lútea*).—Stem angular, erect; leaves twice pinnate; leaflets broadly wedge-shaped, and cut, or 3-cleft; bracts very small; pods nearly cylindrical, and very short. Like the solid-rooted species, this plant is destitute of tendrils. Its flowers are of a bright yellow, appearing in May and June. This species is not uncommon on old walls, sometimes flourishing there in great abundance; but there is no reason to believe it is an indigenous plant, though, from its frequent occurrence without culture, it is generally enumerated among the plants of our British Flora.

2. Fumitory (*Fumária*).

1. **Ramping Fumitory** (*F. capreoláta*).—Sepals as broad as the corolla, and half as long; fruit globose, notched; leaves twice pinnate; leaflets flat. Plant annual. This species, which is very common in hedges, gardens, and by roadsides, is so variable, that it is often very difficult of discrimination by the unpractised botanist. Sir William Hooker observes, that it is best distinguished by its calyx leaves, and its large petals. He remarks, that "in the south of Europe, the fruit-bearing flower-stalks are usually remarkably recurved; in Germany and the south of England, they are only arched backwards; and in Wales and Scotland they are often straight and spreading." Other changes in the appearance of the plant occur also according to the soil on which it is found. It generally climbs by means of its leaf-stalks. It is in blossom very early in the year, and during May it grows beside the lovely flowers, some of them so full of the sweet scents—

"Which zephyr, in his wanton play,
Scatters in spring's triumphant way,
Of primrose pale, and violet,
And young anemone, beset
By thousand spikes of every hue,
Purple and scarlet, white and blue;
And every breeze that sweeps the earth,
Brings the sweet sound of love and mirth;
The shrilly pipe of things unseen
That pitter on the meadow green;
The linnet's love-sick melody;
The laverock's carol, loud and high;
And mellow'd, as from distance borne,
The music of the shepherd's horn."

The flower is in bloom until August; the typical form is cream-coloured, becoming darker after fertilization; but there are sub-species whose flowers are pink tipped with purple.

The old English name of Earth-smoke, given indiscriminately to several of the species, has its French synonym of *Fumeterre*, while the Italians call the plant *Fummosterno*. It is *Der Erdrauch* of the Germans, the *Duivekervel* of the Dutch, and the *Palomilla* of the Spaniard. The Fumitory and the Fumaria of the botanist alike indicate, with most of the continental names, its connexion with smoke; some say, because it covers the earth like smoke; others, because it affects the eyes like smoke. Some detect in it a smoky odour, not perceptible to the author; but the reason given by the Rev. C. A. Johns, in his "Flowers of the Field," is doubtless the true one. "Its name," this gentleman says, "from *fumus*, smoke, was given because the smoke of this plant was said by the ancient exorcists to have the power of expelling evil spirits, when men believed in 'herbes of vertue,' and called in their aid to—

"'Chase evil spirits away by dint
Of sickle, horseshoe, hollow flint.'"

The author has inquired in many villages for any trace of old superstitious customs connected with the Fumitory, but could find none, though they probably exist in Northamptonshire, as Clare says—

1. CLIMBING CORYDALIS
   Corydalis clavicularis
2. BULBOUS FUMITORY
   Corydalis solida
3. YELLOW FUMITORY
   Corydalis lutea
4. RAMPING FUMITORY
   Fumaria capreolata
5. COMMON FUMITORY
   Fumaria officinalis
6. SMALL FLOWERED FUMITORY
   Fumaria parviflora

Pl. 14.

"And Fumitory, too, a name
Which superstition holds to Fame."

This, and other species, are, however, still used in milk as a cosmetic, and probably are not without efficacy in removing freckles, and the brown tint given by exposure to the sun. Shakspeare alludes to the Fumitory as a sign of a neglected soil :—

"Her fallow leas
The darnel, hemlock and rank fumitory
Doth root upon ; while that the coulter rests
That should deracinate such savagery.
The even mead that erst brought sweetly forth
The freckled cowslip, burnet, and sweet clover,
Wanting the scythe, all uncorrupted rank."

2. **Common Fumitory** (*F. officinális*). — Sepals narrower than the corolla, acute, sharply toothed ; fruit nearly globose, terminating abruptly ; leaflets narrow, usually channelled. Plant annual. Common as this plant is in dry fields and on road-sides, and intruding itself unbidden into the garden, yet it is not indigenous to our soil, though now one of its commonest weeds. In the days of Conrad Gesner, it was rare in the fields of Southern Europe, and supposed to come from the East ; now, it grows not only in England, but is wild in the corn-fields of most continental countries, from Greece to Lapland. The flowers are smaller than those of the species last described ; they are rose-coloured, and tipped with purple ; and children, in many parts of Kent, call them wax dolls. The plant is in flower nearly all the summer ; and even as early as May the field of young green corn is often reddened by its numbers. It was formerly much used as a tonic medicine ; and Thunberg mentions that in Japan it is employed medicinally.

3. **Least-flowered Fumitory** (*F. parviflóra*).—Sepals very minute ; fruit globose, slightly pointed, or blunt ; leaflets linear, channelled. Plant annual. This plant is found flowering in waste places from June to September, but it is by no means common. Its range in this country extends from Mid-Scotland to Surrey and Kent. Its narrow leaf-segments are yellowish-green, and its pale flowers are produced in dense racemes. These flowers, at first almost white, afterwards become purple.

4. **Small-flowered Fumitory** (*F. micrántha*).—Sepals somewhat cordate at the base, deeply toothed at the margin, concave at the back, shorter and broader than the corolla. Segments of the leaves narrow and channelled. Plant annual. A small plant, blooming from June to August, in waste places ; not rare in England, and found in several spots in the east of Scotland. Several varieties of the last two species are described, while many botanists consider that both of these small-flowered kinds of Fumitory are but varieties of the commoner and larger kinds. This is the *F. densiflora* of Decandolle.

Order VI. CRUCIFERÆ—CRUCIFEROUS TRIBE.

The crosswise arrangement of the petals at once distinguishes the cruciform plants, instances of which blossoms are very familiar in the Wallflower, Stock, and other wild and garden plants. The petals are invariably four in

number, and the stamens six, of which two opposite ones are shorter than the other four. The seed-vessel is either a long silique, composed of two valves and a central partition; or it is a shorter pod, termed a *silicle*, or pouch, which is generally, but not invariably, similarly formed. Two green glands are usually present at the base of the stamens, and secrete honey. The plants are either annual, biennial, or perennial herbs, occasionally becoming, as in the Wallflower, a sort of under shrub, but rarely exceeding three feet in height.

The Cruciferous Order furnishes us with many of the vegetables which constitute our food. The Turnip, Cabbage, Radish, Horse-radish, and a variety of other important plants, have cruciform blossoms. Most vegetables of this order contain, when wild, an acrid, volatile, oily principle, which is peculiarly abundant in the seeds of the Mustard and the roots of the Horse-radish, and which occurs in a milder form in the foliage of the Watercress, the Scurvy-grass, and other edible plants. The cruciform plants also contain a quantity of nitrogen gas, which is the cause of the unpleasant odour emitted by them in decaying. It has been observed that cruciform plants are always eatable when their texture is succulent and watery, as in the leaves of the cabbage, and the roots of the turnip and radish. None are unwholesome, though some, like the Wallflower, are too acrid to be palatable. Many very beautiful garden flowers are contained in this order. The fragrant Stock and Wallflower, the Candy-tufts, the Rockets and Alyssums, are found in almost every garden; and the pretty Cuckoo-flower, the Cardamine of the meadow, and the yellow Charlock of the fields, are only a few of the many which blossom in our wild landscape.

The chief generic mark of this order is founded on the position in the seed of the radicle with regard to the cotyledons or seed-lobes; but as this arrangement is too difficult to be comprehended by any but the scientific botanist, it is not alluded to in a work intended for popular use.

The Cruciform Order is pre-eminently European, occurring mostly in the temperate regions of Europe and Asia. Upwards of 200 grow in the frigid zone, the scanty vegetation being chiefly composed of these plants. Some of them thrive at the limits of the perpetual snows of lofty mountains, and others follow man into whatever region he may penetrate.

* *Seed-vessel, a pouch* (silicle) *or short pod.*
† *Pouch 2-valved, with a central vertical partition.*

1. PENNY-CRESS (*Thláspi*).—Pouch rounded, flat, notched; valves boat-shaped, winged at the back; seeds many. Name from the Greek *thlao*, to flatten.

2. SHEPHERD'S PURSE (*Capsélla*).—Pouch inversely heart-shaped, flat; valves boat-shaped, keeled, but not winged; seeds numerous. Name, a small *capsa*, or seed-case.

3. HUTCHÍNSIA.—Pouch elliptical, entire; valves boat-shaped, keeled, not winged; cells 2-seeded. Named from Miss Hutchins, of Bantry, Ireland, an eminent botanist.

4. TEESDÁLIA.—Pouch roundish, notched; valves boat-shaped, keeled;

cells 2-seeded; stamens having a small scale at the base of each, within. Named in honour of Mr. Teesdale, of Yorkshire.

5. PEPPER-WORT (*Lepídium*). —Pouch roundish; valves keeled; cells 1-seeded; petals equal. Name from the Greek *lépis*, a scale, from the shape of the pouches.

6. CANDY-TUFT (*Ibéris*).—Pouch blunt; valves keeled or winged; cells 1-seeded; petals unequal. Name from *Iberia*, Spain, where many species grow wild.

7. SCURVY-GRASS (*Cochleária*).—Pouch globose, or nearly so; valves not flattened; seeds numerous. Name from *cochlear*, a spoon, from the shape of the leaves.

8. AWL-WORT (*Subulária*).—Pouch oval; valves flattened, boat-shaped; seeds several. Name from *súbula*, an awl, from the shape of the leaves.

9. WHITLOW-GRASS (*Drába*).—Pouch oval, or oblong; valves slightly convex; seeds many, in two rows. Name from the Greek *drabé*, acrid.

10. CAMELÍNA.—Pouch oval; valves inflated, with a prominent nerve at the base; cells many-seeded. Name from *chamæ linum*, dwarf flax.

11. KÓNIGA.—Pouch oval; valves flattened; cells 1-seeded. Name in honour of Mr. König, of the British Museum.

† † *Pouch without a central vertical partition; or* 1-*celled, and* 1-*seeded.*

12. SEA-ROCKET (*Cakilé*).—Pouch angular, with a horizontal joint; lower division containing a pendent seed, the upper an erect seed. Name of Arabic origin.

13. SEA-KALE (*Crambé*).—Pouch 2-jointed; upper cell containing one pendent seed, which is supported on a stalk springing from the base of the cell; lower joint seedless. Name from the Greek *krambé*, a cabbage.

14. WART-CRESS (*Corónopus*).—Pouch 2-lobed, rough, not bursting; cells 1-seeded. Name from the Greek *coroné*, a crow, and *pous*, a foot, from the shape of the leaves.

15. ISÁTIS.—Pouch flattened, 1-celled, 1-seeded; valves keeled. Name from the Greek *isazo*, to render equal, because supposed to destroy all roughnesses of the skin.

* * *Seed-vessel a* silique, *or long pod.*

† *Pod opening by two valves.*

16. CORAL-ROOT (*Dentária*).—Pod narrow, pointed; valves flat, nerveless; seeds in a single row, on broad stalks. Name, *dens*, tooth, from the tooth-like scales of the root.

17. BITTER-CRESS (*Cardamíne*).—Pod linear; valves flat and nerveless, separating with an elastic spring; seeds in a single row, on thread-like stalks. Name from the Greek *cardia*, the heart, and *damao*, to fortify, from its supposed strengthening properties.

18. ROCK-CRESS (*Arabis*).—Pod linear; valves flat, nerved, or veined; stigma nearly sessile, obtuse; seeds in a single row. Name, from being originally an Arabian genus.

19. TOWER MUSTARD (*Turrítis*).—Pod linear, 2-edged; valves prominently

nerved; seeds in two rows. Name from *turris*, tower, from its place of growth, or from its towering form.

20. WINTER-CRESS (*Barbaréa*).—Pod linear, 4-angled; valves with prominent nerve; seeds in a single row; calyx erect. Name from St. Barbara, to whom it was anciently dedicated.

21. CRESS (*Nastúrtium*).—Pod short, nearly cylindrical; valves convex, nerveless; seeds irregularly placed in two rows; calyx spreading. Name from *nasus tortus*, a distorted nose, on account of the pungent properties.

22. HEDGE MUSTARD (*Sisýmbrium*).—Pod rounded or angular; valves convex, with three nerves; stigma entire; seeds in a single row. Name, the Greek name of several plants.

23. TREACLE MUSTARD (*Erýsimum*).—Pod 4-sided valves keeled; stigma obtuse, entire, or notched; seeds without margins, in a single row. Name from the Greek *eruo*, to draw blisters.

24. WALLFLOWER (*Chéiranthus*).—Pod flattened; valves with a prominent nerve; stigma of two spreading lobes; calyx erect, two opposite sepals swollen at the base. Name probably of Arabic origin.

25. STOCK (*Matthíola*).—Pod cylindrical, or flattened; stigma of two converging lobes; seeds generally with a membranous wing. Name, in honour of an Italian botanist, Dr. Matthiolus.

26. CABBAGE (*Brássica*).—Pod nearly cylindrical, beaked; valves nerved; seeds globose, in a single row; calyx erect. Name from the Celtic *bresic*, a cabbage.

27. MUSTARD (*Sinápis*).—Pod nearly cylindrical, tapering; valves with 1 or 3 nerves; seeds globose, generally in a single row; calyx spreading. Name from the Greek *sinapi*, mustard.

28. DAME'S VIOLET (*Hésperis*).—Pod 4-sided or 2-edged; stigma nearly sessile; calyx erect. Named from *Hesperos*, the evening; at which time the flowers yield a powerful fragrance.

† † *Pod without valves.*

29. RADISH (*Ráphanus*).—Pod swollen, imperfectly jointed, tapering; seeds globular; calyx spreading. Name in Greek signifying its early appearance, or quick growth.

1. PENNY-CRESS (*Thláspi*).

1. **Mithridate Mustard, or Penny-cress** (*T. arvénse*).—Pouch round and flat, with a broad wing around it, and a deep notch; seeds striated; leaves oblong, arrow-shaped at the base, smooth, and toothed. Plant annual. This cress has a very singular appearance in autumn, when the flowers are dead, and its large flat seed-vessels stand around the upper part of its stem. These seed-vessels are about the size of silver pennies, hence its English name; and Pliny mentions that it is from them that the whole genus was called *Thlaspi*: he adds that they are like lentils. When rubbed, this plant has a faint odour of garlic; and Sir J. E. Smith remarks that it was formerly used in the Mithridate confection, "an elaborate hodge-podge now laid aside." This plant is in blossom all the summer on waste ground, or in cultivated fields, but it is of local occurrence. The flowers are small and white, and grow in little clusters.

1. PENNY CRESS.
Thlaspi arvense.

2. PERFOLIATE PENNY CRESS.
Thlaspi perfoliatum.

3. ALPINE PENNY CRESS.
Thlaspi alpestre.

4. SHEPHERDS PURSE.
Capsella bursa pastoris.

5. ROCK HUTCHINSIA.
Hutchinsia petræa.

6. NAKED STALKED TEESDALIA.
Teesdalia nudicaulis.

Pl. 15.

2. **Perfoliate Penny-cress** (*T. perfoliátum*).—Pouch inversely heart-shaped, and surrounded by a wing; style shorter than the notch of the pouch; seeds smooth, three or four in a cell; stem-leaves oblong, heart-shaped at the base. Plant annual. This is a much rarer plant than the last, known only on limestone pastures in Oxfordshire and Gloucestershire. In the earlier part of the century it was known to grow only among the old stone-pits about Burford, in Oxfordshire; but perhaps the botanists who sought it were too eager in their desire to possess specimens of so rare a plant, and eradicated it, for it cannot now be found there. This is too often the case with rare plants, which are sometimes gathered with a selfish inconsideration for other botanists; and hence many persons are unwilling to make known the place of growth of any peculiarly interesting species. The Perfoliate Penny-cress is now found in great abundance in the stony valleys of the Cotswolds; in recent years it has been recorded from these habitats: Bourton, Upper Slaughter, and Naunton-Seven-Springs, near Stow-on-the-Wold, Gloucestershire. According to Baxter, sheep are peculiarly fond of this plant, while they never touch the Whitlow-grass (*Draba verna*), which grows in the same place. He adds, that in a field, where there was one day a great quantity of the Perfoliate Cress, it was, by the next, entirely cropped off by the sheep which had been turned into the pasture. Even when left untouched this plant is but of short duration, as it flowers at a very early period, and soon runs to seed; so that before summer heat sets in it has entirely disappeared. Its foliage is of glaucous green; and it is in bloom early in April and throughout May. It is a native also of France, Italy, Spain, Germany, and Greece.

3. **Alpine Penny-cress** (*T. alpéstre*).—Pouch inversely heart-shaped, abrupt, entirely surrounded by a wing; style longer than the notch of the pouch; seeds numerous; stem-leaves arrow-shaped at the base; stem simple. Plant perennial. This plant, which shows its small white flowers during June and July, is very rare, and grows chiefly on mountainous pastures in the north of England, whence it extends through Wales to Somerset.

2. Shepherd's Purse (*Capsélla*).

Common Shepherd's Purse (*C. bursa-pastóris*). — Whole plant more or less hairy; stem-leaves oblong, toothed, and arrow-shaped at the base; root-leaves pinnatifid. Plant annual. This plant was formerly included in the genus *Thlaspi*, but has been separated from it, because of the absence of the winged valves which are found in the pouches of that genus. The Shepherd's Purse must be known to all, for it grows in fields, on hedge-banks, on beaches, on cliffs, by the city pavement, and on the garden bed or neglected gravel path. It varies much in size, sometimes being only two or three inches high, and at others coming up on pastures in most unwelcome luxuriance, and attaining the height of one or even two feet, well deserving its common name of Pickpocket, by the room which it occupies on valuable land. Its flowers are very small and white, and grow in little clusters, blooming all the summer. Its numerous flat seed-pouches characterise the plant; and they are sufficiently like a rustic flat leather purse to have obtained for it not only its English name, but the synonyms by which it

is known in country places almost throughout Europe. The French call it *Bourse de Pasteur;* the Spanish, *Bolsa de Pastor.* It grows abundantly about the ruins of the ancient city, and the Roman peasant calls it, too, *Borsa de Pastor.* It was known to our forefathers by the name of St. James's Weed, and Poor Man's Parmacetie; the latter alluding to the medicinal virtues which Lightfoot says were formerly thought "good" for external and internal maladies of man or beast. It was in those days boiled and eaten as greens, and is still sold in the markets of some North American cities. The plant is truly cosmopolite; and the traveller, when he sees little else to remind him of his native soil, can generally find the Shepherd's Purse. Fortune, in his "Wanderings in China," thus remarks of the vegetables which crowd the stands in front of the shops of Shanghai. "Besides the more common kinds," he says, "the Shepherd's Purse and a species of Trefoil, or Clover, are used among the natives here; and really these things, when properly cooked, particularly the latter, are not bad." As to the remedial virtues of the plant, we know of none in modern days, except the antiscorbutic properties which this contains in common with all the cruciform plants, though in less degree than many. The old herbalists certainly, however, discovered many hidden virtues in vegetables; and though they had various fanciful notions respecting them, yet they were right in their opinions concerning some which are now altogether disused and overlooked. They were often very patient investigators, though few, perhaps, were so diligent in making experiments as was Conrad Gesner, who used to eat small portions of wild herbs, and to test personally their effects on the system, by sitting down to his study with their leaves or flowers bound about him, to see how they would affect his constitution. By these means he accumulated a number of isolated facts, from which botanists in later days have been able to generalize.

3. Hutchinsia (*Hutchínsia*).

Rock Hutchinsia (*H. petræa*). — Leaves pinnate, entire; petals scarcely longer than the calyx; pouch blunt at both extremities; stigma sessile. Plant annual. This is a pretty delicate little plant, from two to four inches high, which in March and April has small clusters of minute white flowers. It grows on limestone rocks in several parts of England and Wales, and has been found on the wall of Eltham Church, in Kent, where it is believed to have been planted by Dillenius, the friend of Linnæus, and author of the 'Hortus Elthamensis.' The flattened oblong pods do not exceed a line in length, and contain but two pale seeds in each cell.

4. Teesdália.

Naked-stalked Teesdalia (*T.' nudicaúlis*). — Petals unequal; leaves almost all growing around the root, pinnatifid. Plant annual. This neat little plant has small corymbs of white flowers in May; the leaves form a rosette around the root, and are closely pressed to the ground. It grows on dry banks. Mr. Robert Teesdale, after whom it was named, was the author of a Catalogue of the Plants growing about Castle Howard, in the North Riding of Yorkshire, which was published in the 'Transactions of the Linnean Society.'

1. BROAD LEAVED PEPPER WORT.
Lepidium latifolium

2. NARROW LEAVED PEPPER WORT.
Lepidium ruderale

3. FIELD PEPPER-WORT.
Lepidium campestre

4. HAIRY PEPPER WORT.
Lepidium sativum

5. BITTER CANDY TUFT.
Iberis amara.

Pl. 16.

5. PEPPER-WORT (*Lepidum*).

1. **Broad-leaved Pepper-wort** (*L. latifólium*).—Leaves oblong, toothed, radical, stalked, smooth; pouch oval. Plant perennial. The names of this and of some other plants remind us of the days when culinary vegetables were little cultivated, and when condiments were expensive; of days when Lamb's Lettuce, and Sauce Alone, and Poor Man's Pepper, were welcome additions to the diet. When Pepper was so dear, that to promise a saint yearly a pound of it was a liberal bequest, no wonder that the economical housewife, or the poor one, seasoned her dishes with the pungent leaves of some wild herb, and gave to it the name of Poor Man's Pepper. The young leaves are still sometimes eaten in salad, but their pungency is almost too powerful to be agreeable, though there is no doubt that they were well liked in former times. As Beckmann remarks, "Some plants, both indigenous and foreign, which were formerly raised by art, and used at the table, are no longer cultivated, because we have become acquainted with others more beneficial. Many of them served our forefathers in the room of foreign spices, to the use of which trading companies have accustomed us, much to their advantage and our hurt." It is true, also, that many have been banished by fashion, which rules with universal sway, and commands the taste as well as the smell to consider as intolerable articles to which our ancestors had a peculiar attachment. The root of the plant was formerly used instead of Horseradish. It is very large and creeping, and very acrid in flavour. The foliage is of a dull bluish green colour, and its small white flowers, which open in July, grow in crowded leafy clusters. It is found in salt marshes, and on the sea-coast, but is not frequent. Several species which grow wild in other lands are used as food; and the garden cress, which most of us have, during childhood, cherished on some tiny square of earth, and which will grow even on moistened flannel, is the *Lepidium sativum* of the botanist. One of the species common in New Zealand, *Lepidium oleraceum*, is a powerful antiscorbutic, and, in times before our naval crews were furnished with lime-juice, was of essential service to mariners landing there, as it was very beneficial in the complaints induced by salt provisions. This species has the flavour of lettuce. Another kind is very serviceable to the Sandwich Islander, as it inebriates fish, and enables him to capture them readily. The French call our broad-leaved species *La passerage*. It is *Die Kresse* of the Germans, the *Pepper Kruid* of the Dutch, and the *Lepidio* of the Italian and Spaniard.

2. **Narrow-Leaved Pepper-wort** (*L. ruderále*).—Leaves smooth; lower ones pinnatifid and toothed; upper ones linear and entire; petals wanting; stamens 2. Plants annual. This cress, which flowers in June, in waste places near the sea, is much smaller than the preceding kind. It has a stem about a foot high, much branched, and a great number of seed-vessels.

3. **Field Pepper-wort** (*L. campéstre*).—Leaves downy; upper ones arrow-shaped at the base; pouch rough, with minute scales; style scarcely longer than the notch. Plant annual. This is more frequent than either of the former species. It occurs in corn-fields on dry gravelly soils. It has an

erect stem, from ten to twelve inches in height, and its white flowers bloom from June to August.

4. **Hairy Pepper-wort** (*L. smithii*). — Leaves downy; upper ones arrow-shaped at the base; pouch not scaly; style much longer than the notch. Plant biennial. This, as well as the Field Pepper-wort, is frequent. It is a greyish downy plant, with small white flowers, and numerous seed-vessels. It grows in abundance in hedges about Belfast and Dublin, and is common in the north of Scotland, and in some counties in England. It is much like the Field Pepper-wort, though truly distinct. Hooker regards it as a sub-species of *L. campestre*.

6. Candy-tuft (*Ibéris*).

Bitter Candy-tuft (*I. amára*).—Leaves lanceolate, acute, somewhat toothed, smooth; pouch round, with a narrow notch. Plant annual. We are far more familiar with the Candy-tuft as a garden than a wild flower, and its white and rich purple blossoms are very ornamental to the border. Our wild kind has less pretensions to beauty, but it has thick clusters of white blossoms, and its stems are about a foot high, spreading around the root. It grows in corn-fields, chiefly on chalky soils; but it is thought to be either the outcast of gardens, or to have been introduced with grain from the south of Europe. It is frequent in Bucks, Oxfordshire, and Berkshire; and the author once saw a quantity of it in a field about three miles from Royston, in Cambridgeshire, far from any houses, and apparently wild. The whole plant is very bitter, and it is antiscorbutic. It is sometimes called Clown's Mustard. It is a native of Europe, from Spain to Germany, and from England to Italy. The Dutch call it *Bitter Scheefbloem:* the Spaniard, *Carraspique.* It is *L'Iberide* of the French, and *Die Iberpflanze* of the Germans.

7. Scurvy-grass (*Cochleária*).

1. **Common Scurvy-grass** (*C. officinális*).—Pouch nearly globose; root-leaves between heart-shaped and kidney-shaped, stalked; stem-leaves oblong, sessile, slightly lobed, toothed at the base, stem often much branched. Plant annual. The English name of this genus indicates the medicinal properties of the plants composing it. It is of old repute for diet drinks, and is one of the ingredients which formed the "Spring juices" of our forefathers, and which doubtless were beneficial to health. The common species had also, in olden times, the names of Scruby-grass and Spoon-wort; and very ample details have been given by medical botanists of its use in stimulating the digestive organs, and in removing cutaneous maladies. The circumstance of its growing near the sea has long been regarded as a providential adaptation to the needs of the mariner; and many a sailor, or passenger, after a long voyage, may have derived advantage from it in those complaints engendered by salt provisions, and absence of vegetable diet. The town of Barmouth is said to have formerly obtained its celebrity as a resort for invalids, on account of the quantity of scurvy-grass growing in its neighbourhood. This plant blossoms in May. It has rather large corymbs of white flowers, and its succulent leaves, very variable in form, are sometimes hollow,

1 COMMON SCURVY GRASS.
Cochlearia officinalis

2 GREENLAND SCURVY GRASS.
Cochlearia groenlandica

3 ENGLISH SCURVY GRASS.
Cochlearia anglica

4 DANISH SCURVY GRASS.
Cochlearia danica

5 HORSERADISH.
Cochlearia armoracia

Pl. 17.

like the bowl of a spoon. They were formerly eaten by country people in salads, but they are very pungent. The author has known persons living in villages in Kent, to bruise them with a small quantity of water in a mortar, and take the juice thus expressed, daily, as a spring drink. The plant grows on muddy shores and salt marshes, and on the Highland mountains. A smaller variety, common on these mountains, is regarded by some botanists as a distinct species, and termed *Cochlearia Grœnlandica*. The Scurvy-grass is *Das Lösselkraut* of the Germans, the *Lepelkruid* of the Dutch, *Le Cranson* of the French, and the *Skee-wurt* of the Danes.

2. **English Scurvy-grass** (*C. ánglica*).—Pouch elliptical, veined; root-leaves stalked, oblong, entire; stem-leaves oblong, toothed at the base, sessile. Plant annual. This plant grows on the borders of inland rivers, and in salt marshes. It is more slender than the last-named species, and its seed-vessels and blossoms are larger. Its white flowers appear in May and June. It is found on the banks of the Thames, between London and Woolwich, on the borders of the Avon, near Bristol, and in other similar localities, both in England and Scotland. Many writers think it but a variety of the Common Scurvy-grass, only altered by the circumstances of soil and situation.

3. **Danish Scurvy-grass** (*C. dánica*).—Pouch ovate, veined; leaves all stalked, lobed, and nearly triangular. Plant annual. This is as common a species as any, growing about hedges and on cliffs near the sea. It is very much smaller and less robust than *C. officinalis*.

4. **Horseradish** (*C. armorácia*).—Root-leaves oblong, on long footstalks, the edges with rounded notches; stem-leaves long, lanceolate, serrated, or entire; root long and tapering; pouch shorter than the flower stalks. Plant perennial. The Horseradish has so long been cultivated as a condiment to the "Roast Beef of Old England," that it has become a familiar plant to us, both in gardens and in many wild places. It grows in ditches and odd corners, where it increases by means of its roots, for it rarely produces seeds in this country. It is not a native. It has small white flowers in May and June.

8. Awlwort (*Subulária*).

Water Awlwort (*S. aquática*).—Leaves awl-shaped, few in number, and all springing from the root. This singular little plant is not unfrequent on the sandy or gravelly bottoms of Alpine lakes. The leaves are two or three inches long, the roots white and fibrous, and the small white flowers appear in July. It is a native also of Lapland, Sweden, Norway, Germany, Holland, and other parts of the Continent; and is *La Subulaire* of the French, the *Wasserpfriemen* of the German, and the *Elskruid* of the Dutch; while in Denmark it is known as the *Sylblad*, and in Norway as the *Frytilje*. It is a very curious plant, on account of its usually flowering beneath the water. This is contrary to the general habit of water-plants, which almost always rise above the surface of the stream before they expand, in order that fertilization may take place in air. The flowers are, doubtless, often perfected beneath the water; but the Rev. Hugh Davies gives, in his 'Welsh Botanology,' an account which proves that the Awlwort sometimes expands

above the surface. "In the dry summer of 1798," says this gentleman, "as I walked in the bed of a lake, called Llyn Llywenan, in the parish of Bodedern (Anglesea), whence the water had retired about two months before, I unexpectedly discovered this plant in great abundance. Notwithstanding that its appearance was very different from what I had been used to see in the Arvonian Alpine lakes, where it always blossoms and seeds at the bottom, under water of considerable depth, yet it did not seem to regret the privation; the foliage was spread, the leaves somewhat reclining, and the flowering-stems procumbent; the calyx and corolla were fully expanded; the petals, which are white, and of an obovate form, were horizontal, the seed-vessels and seed quite perfected; and, on the whole, it seemed to indicate a quite different plant."

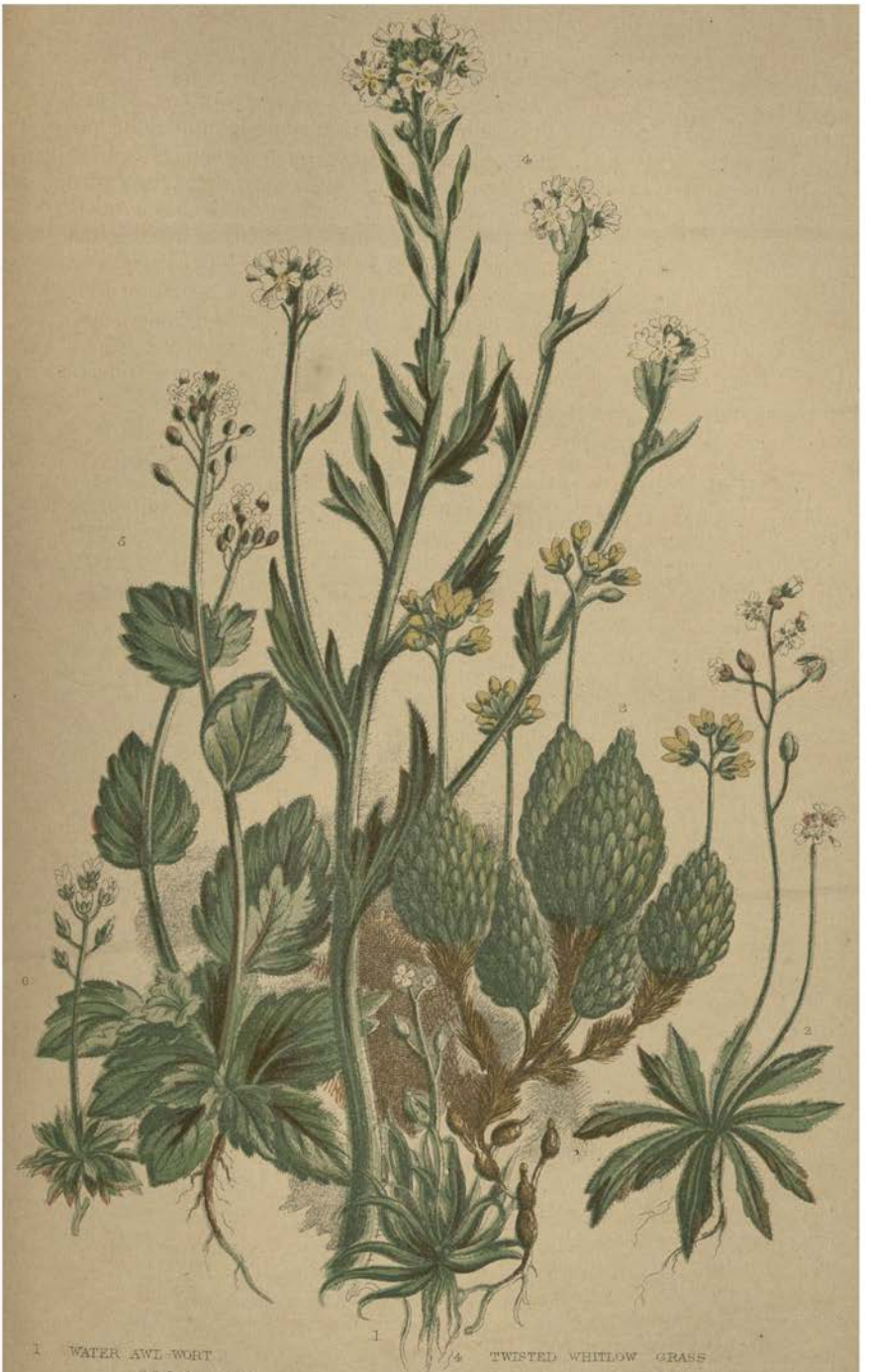
9. Whitlow-grass (*Drába*).

1. **Vernal Whitlow-grass** (*D. vérna*).—Flower-stalks leafless; petals deeply cleft; leaves narrow, pointed, somewhat toothed, hairy. Plant annual. This is well named a vernal flower, and is truly welcome for its early bloom, bringing to remembrance the elegant fancy which Westwood has conceived of the Snowdrop:—

> "It is the herald of the flowers,
> Sent with its small white flag of truce, to plead
> For its beleagur'd brethren: suppliantly
> It prays stern Winter to withdraw his troop
> Of winds and blustering storms, and having won
> A smile of promise from its pitying foe,
> Returns to tell the issue of its errand
> To the expectant host."

The blossom of the Whitlow-grass would hardly attract the regards of any save those who truly love wild flowers, for it grows in small clusters, on a stem about two, or, at most, three inches high; though, when growing in any quantity, it whitens the summit of the wall or dry bank, during February and March. The leaves form a circle around the root, but seldom spread out so far but that a half-crown piece would hide them; and specimens of minute beauty may sometimes be seen, in which flower and foliage too would be enclosed in a circle not larger than a lady's ring. It sometimes peeps up above the snow; and the author has seen its tiny flowers emerging from the white mantle which covered the summits of some of the old walls about Rochester Cathedral. Our fathers used to imagine that when it appeared in any quantity, it foreboded short crops of corn in autumn; an idea, perhaps, not altogether without foundation, because it flourishes best in a rainy season, and such a season helps to fill the corn-field with weeds. The small white flowers of the Whitlow-grass droop during rain. The plant is very acrid, and is found on walls, banks, and dry rocky places throughout Europe. There are many distinct forms of this common species. A variety was found by Sir William Hooker and Dr. Arnott among the shelving rocks at Ben Lawers, which is remarkable for its inflated pouches; it is recognised as a sub-species, *D. inflata.*

2. **Yellow Alpine Whitlow-grass** (*D. aizoides*).—Flower-stalk leafless, smooth; petals notched, twice as long as the calyx; style much longer



1. WATER AWL WORT
   Subularia aquatica
2. VERNAL WHITLOW GRASS
   Draba verna
3. YELLOW ALPINE WHITLOW GRASS
   Draba aizoides
4. TWISTED WHITLOW GRASS
   Draba incana
5. SPEEDWELL LEAVED WHITLOW GRASS
   Draba muralis
6. ROCK WHITLOW GRASS
   Draba rupestris

Pl. 18.

than the stamens; leaves narrow, pointed, glossy, keeled, and fringed. Plant perennial. This elegant little plant forms dense tufts on the walls of Pennard Castle, near Swansea. It is rendered conspicuous from afar, in March and April, by its flowers of bright yellow, which, though very small, are very abundant, and on stalks about two inches high.

3. **Twisted Whitlow-grass** (*D. incána*).—Stem-leaves narrow, toothed; petals entire; pouch twisted. Plant biennial. The leaves of this species distinguish it from the common kind, for they are quite white with down. It is also much taller, sometimes attaining a foot in height; and though not a common plant, yet is less rare than several of the species, growing on mountain-rocks in Wales, the north of England, and in Scotland, and bearing white flowers in June and July. Several of our British species are also annual or perennial plants of the cold mountainous countries of Europe, and a few are American. The French call the Common Whitlow-grass *La Drane;* the Germans term it *Hungerblümchen;* and the Dutch, *Taschkruid.* Its continental name of Hunger-flower, given, probably, on account of the barren soils on which the different species flourish, seems very general. Thus the Swedes call it also *Hunger-blomster*, and the Danes *Hungerblomst.* The name of Whitlow-grass, as well as that of Nailwort, point to the opinion of our old herbalists, that the acrid juice of these plants, mingled with milk, cured whitlows; though, probably, the efficacy of the remedy belonged to the milk only, hot milk being still used in cases of whitlow.

4. **Speedwell-leaved Whitlow-grass** (*D. murális*).—Stem leafy, branched; leaves rough, egg-shaped, blunt, toothed, embracing the stem; flower-stalks spreading horizontally. Plant annual. This species has the tallest stems of any of the family, its small white flowers sometimes rising more than a foot high from the ground. It blossoms in May, on limestone rocks, from York to Somerset, but is a rare plant.

5. **Rock Whitlow-grass** (*D. rupéstris*).—Flower-stalk leafless, or rarely with one leaf; pouch or pod oblong-oval; leaves flat, lanceolate, and hairy. Plant perennial. This tiny flower is very beautiful, but very rare; rising just above the green moss, its little white blossoms, during July, stand amid stems with branches, each crowned with a tuft of soft fringed leaves, several of the flower-stalks coming up from the same root, and seldom more than an inch and a half in height. The words of the Rev. H. F. Lyte occur to memory when thinking of this delicate little plant, which has beauties to be seen only by him who patiently examines it.

Spare this flower, this gentle flower—
The slender creature of a day;
Let it bloom out its little hour,
And pass away:

"Too soon its fleeting charms must lie
Decay'd, unnoticed, overthrown;
Oh! hasten not its destiny,
Too like thy own!

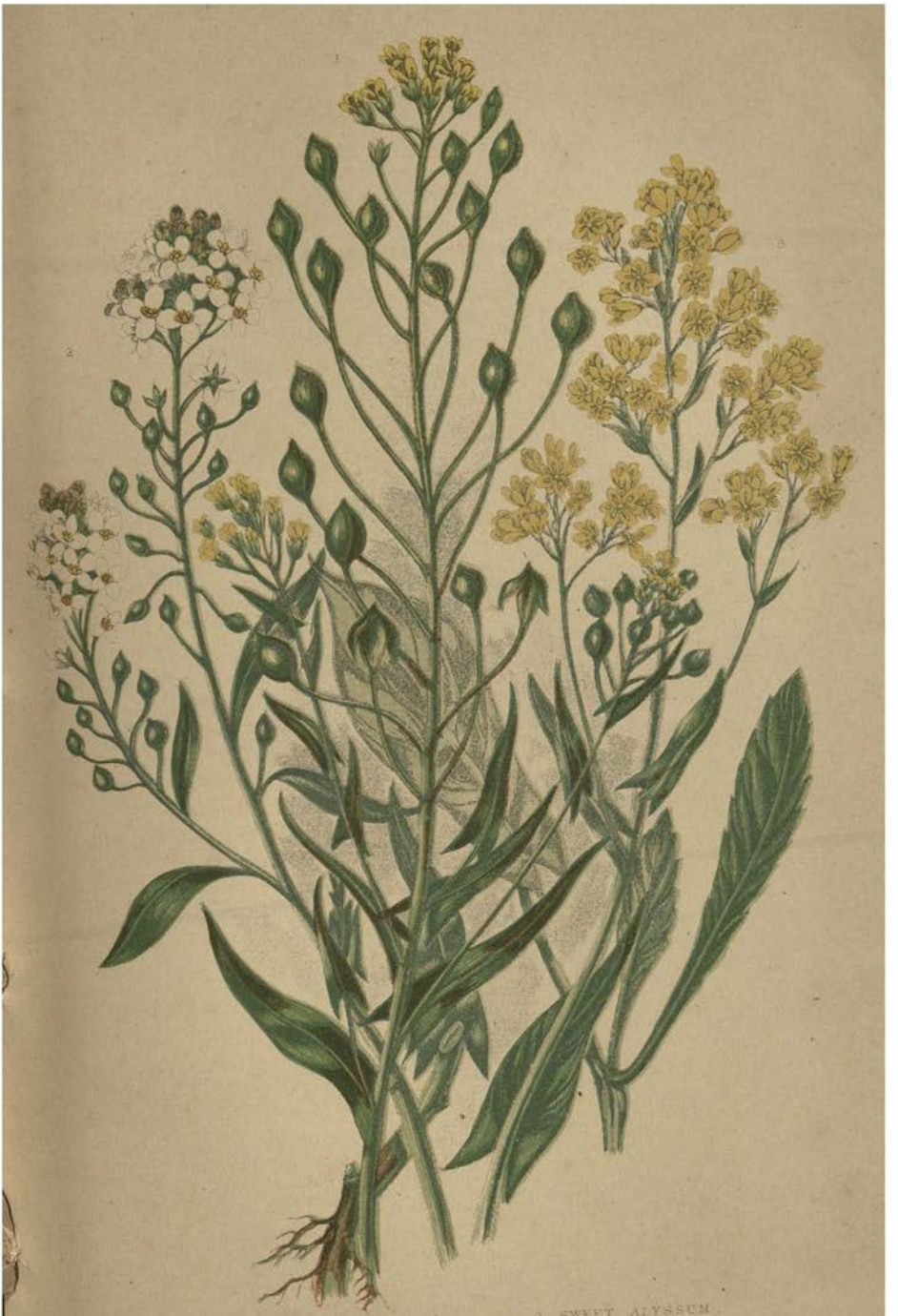
"Oh spare this flower! thou know'st not what
Thy undiscerning hand would tear;
A thousand charms thou notest not
Lie treasured there:

"Not Solomon, in all his state,
Was clad like Nature's simplest child;
Nor could the world combined create
One flow'ret wild."

The Rock Whitlow-grass grows among the crevices or at the summit of some of the Highland mountains.

10. Gold of Pleasure (*Camelina*).

Common Gold of Pleasure (*C. sativa*).—Leaves entire, or sometimes slightly toothed, lanceolate and arrow-shaped at the base; pouches very large, on long stalks; seeds rough. This Gold of Pleasure is certainly rather a naturalized than a truly wild flower. It is found in fields of flax, or in places near where flax has formerly grown, straying from thence into the waste places and field borders at a short distance; but it does not long propagate itself spontaneously in this country, and has disappeared from many localities in which it is recorded to have grown formerly. The author, many years since, found a large quantity of it in a corn-field, near the strange-looking heap of stones between Rochester and Maidstone, commonly called Kit's Coty House, and believed to be the burial-place of Hengist and Horsa. The flowers grow, in June and July, in clusters; they are of a full yellow colour. The plant, however, is quite as conspicuous after flowering as when in blossom; for the pouches on their long stalks present an appearance different from that of any other of our wild plants, and remind one, by the form of their branches, of an old-fashioned candelabrum. Why the plant should have been called Gold of Pleasure is not very apparent; but Professor Burnett says that the name may have a satirical reference to the disappointment caused by gold spent in pleasure; this plant having no great beauty. It is much cultivated in Germany, and other parts of the Continent, for the sake of the oil contained in its seeds; and it is known in most European countries. Gerarde says of it, "Ruellius teacheth that the poore peasant doth use the oile in banquets, and the rich in their lamps." One of its former names was *Myagrum*; the French call it *La Cameline*; the Germans, *Der Leindother*. It is the *Vlaschdotter* of the Dutch, and the *Miagro* of the Italian and Spaniard. The seeds are said to be a favourite food of geese, and cattle eat the plant. The oil procured from it is used for culinary, medicinal, and various household purposes. It is now many years since Mr. Taylor sent to the Royal Institution a communication on the desirableness of introducing the culture of this plant into Ireland. This gentleman, who had for twenty years past been occupied in making various experiments on plants containing oil, had come to the conclusion that the oil contained in the *Camelina* was of much value, both to agriculturists and manufacturers. After describing the plant, and mentioning that it was a native of Siberia, he says, "The first supply of seed was received from Professor Fischer, of the Royal Agricultural Society at St. Petersburg. The soils best adapted to its cultivation are those of a light nature, though it will yield a crop on those of a most inferior description, and has been found on barren sandy soils, where no other vegetation was to be seen. It should be sown early in spring, and may be cultivated after any corn-crops, and is a non-exhauster of the ground." Professor Van



1. GOLD OF PLEASURE
Camelina sativa

2. SWEET ALYSSUM
Koniga maritima

3. DYER'S WOAD
Isatis tinctoria

Ost, an eminent experimental chemist of Belgium, says, "If farmers did but know the value of this plant, they would all grow it. A fine oil, which can be produced from the seeds at a low cost, is fit for burning in lamps; it can also be used in the manufacture of woollen goods and soap, and it is highly nutritive to cattle."

11. Sweet Alyssum (*Kóniga*).

Seaside Koniga, or Sweet Alyssum (*K. marítima*).—Stem somewhat woody at the base; leaves linear, lanceolate, hoary. Plant perennial. We never find this flower inland, and rarely even by the sea. It is not truly wild, never occurring far from a garden where it is or has been cultivated. It has white, honey-scented flowers, which appear in July and August. The Calycine Alyssum (*Alyssum calycinum*), a native of central and southern Europe, is sometimes enumerated among British plants, having established itself in several places; but it appears to be of recent introduction. It is called Calycine because its calyx does not fall off like that of the other species. The genus Koniga is by many writers included in that of Alyssum, which is the Mad-wort of the ancients, and the plants of which were supposed to allay anger. Several species are favourite garden flowers.

12. Sea Rocket (*Cakílé*).

Purple Sea Rocket (*C. marítima*).—Stem and foliage succulent; leaves pinnatifid, somewhat toothed. Plant annual. This plant, which is not uncommon on our sandy shores, is easily distinguished by its succulent habit, and its purplish lilac flowers, which blossom from June till September. It is somewhat bushy, spreading out its zigzag branches, and bearing the same sea-green tint as the foliage of the stock or wallflower. The blossoms are sometimes white, or white streaked or tinged with purple. The seed-vessels are very peculiar, the upper seed in each pouch being erect, and the lower pendent. The whole plant is said, by Anguillara, to have powerful remedial virtues. One of its old English names was *Bunias*, and the French term it *Caquille;* the Germans, *Meerseuf;* the Dutch, *Europische Knodsvrugt;* while the Swedes call it *Strandsenap*. This, or a similar Sea Rocket, grows on the sandy shores of most countries of the northern hemisphere.

13. Sea Kale (*Crambé*).

Sea Kale (*C. marítima*).—Pouch pointless; leaves roundish, waved, and toothed; sea-green, and, as well as the stem, smooth. Plant perennial. It is chiefly on the sandy shores of the west of England that this plant abounds. It is not, however, confined to them, but grows in various places, both on cliffs and sand, as at St. Margaret's, and Langdon Bay, near Dover. It is very plentiful at some parts of the base of the cliffs between Dover and Folkestone, where, as we are whirled past it by the train, we may just get a glimpse of its white flowers and rich purple leaves, which, at a distance, look like gay blossoms. It flowers in June, and differs in no respect from the kind cultivated as an esculent in the kitchen garden. Crambé is one of the Greek names applied to the Cabbage; and our Kale is called by the French *Le Crambé*, and by the Italians *Crambe marina*. The

Spaniards term it *Col marina;* the Danes call it *Strand Kaal;* it is *Der Meerkohl* of the Germans, and *Leerkool* of the Dutch. The country people in the west of England have, for some centuries past, known its worth as a vegetable for the table, and have been in the habit of watching the young shoots and leaf-stalks, which no sooner push up the sand above them, than they are cut off underground, in the same way as asparagus. This occurs during March and April. The Sea Kale was introduced into gardens about the middle of the last century, and is now cultivated in every market garden, where it is forced, by planting it in a rich soil, and blanching the young shoots by sheltering them from the action of light. The origin of its cultivation as a garden vegetable is as follows. Many years since, Dr. Lettsom, when travelling along the southern coast of England, stayed to dine at Southampton. Wandering in the neighbourhood of that town, he saw some women cutting Kale in the sand, and observed that the plants were nearly buried in it. He thought they resembled young shoots of asparagus, and found, upon inquiry, that the fishermen and their families were in the habit of eating them when they could not procure other fresh vegetables. The doctor tasted the raw succulent shoots, and ended by ordering some of this Sea Kale to be sent to the inn for his dinner. He some time after communicated this discovery to his friend, Mr. Curtis. The present mode of culture was introduced by that nurseryman, who having first made the plant known to the public by a pamphlet, which he published in its praise, afterwards sold packets of the seeds to the gardeners, and the plant came into general repute. The Tartarian Sea Kale, *C. tatarica,* is called by the Hungarians, Tartar bread; and its large fleshy root, stripped of the bark, and sliced, is eaten with oil and vinegar. Children eat this root boiled; and the young shoots are also cooked, like those of our native Kale.

14. Wart-cress (*Corónopus*).

1. **Wart-cress, or Swine's-cress** (*C. ruéllii*).—Pouch undivided, rough, with little sharp points; style prominent; leaves twice pinnate, their segments linear. Plant annual. This, though infrequent in Scotland, is common in England, and is in some country places called Star of the Earth. The flowers are very small and white, and blossom throughout the summer; and the cut leaves, fancied to resemble the foot of a bird, are remarkably disagreeable, both in flavour and odour. Notwithstanding this, however, they were doubtless formerly gathered for salad, as another species of Wart-cress still is, according to Delile, in Egypt. Our Wart-cress is a common weed, by road-sides and on waste places, and is in some villages called Herb Ivy, or Herb Eve.

2. **Lesser Wart-cress** (*C. dídyma*).—Pouch of two wrinkled lobes, notched; style very short; leaves once or twice pinnate. Plant annual. Little green tufts of this plant are very common by road-sides in the south and west of England, and often grow on the sand, or among the stones of the shore. Its small greenish flowers are to be detected throughout the summer, and the foliage, if trodden upon, emits a most disagreeable odour. The genus *Corónopus* is by some writers called *Senebiéra*, from M. Senebier, the Genevese physiologist.

1. PURPLE SEA ROCKET
Cakile maritima
2. SEA KALE
Crambe maritima
3. WART CRESS OR SWINES CRESS
Coronopus ruellii
4. LESSER WART CRESS
Coronopus didyma

Pl. 20.

15. WOAD (*Isátis*).

Dyers' Woad (*I. tinctória*).—Pouch wedge-shaped, very blunt, smooth, thrice as long as broad, compressed on the summit and at the sides into a sharp edge; root-leaves numerous, stalked, inversely egg-shaped, tapering at the base, crenate, smooth, or slightly hairy; stem-leaves entire, arrow-shaped at the base. Plant biennial. Many botanists consider that this plant is not truly wild, but it occurs in many places, as in the Isle of Ely, about old stone pits in some parts of Cambridgeshire, and in chalk quarries at other places. The old name of this plant was *Glastum*, from the Celtic *glas*, blue, whence also came the name of the town of Glastonbury. The ancient Britons are believed to have stained their bodies with the indelible woad; hence came the name of Britain, from the Celtic *Brith*, which signified paint. *Brithon*, according to Camden, signified a stained man; but it would be too rugged a word to suit the ear of the Romans, accustomed to a more euphonious language; hence, their historians called the country by the more sonorous name of Britannia. That we thus owe our oldest national name to the Woad, is an opinion pretty generally received; but of the origin of the name itself, we have no certain knowledge. The Picts were so called by the Romans because they, like the Britons, painted themselves, at first, it would seem, to render themselves attractive, as the South-Sea Islander would now stain himself with red; but that which was originally a mark of personal finery, was made in later times, by a refinement of barbarism, an object of terror, and the blue stains were deepened to frighten the enemy. Probably this staining of the body was, as Mr. Disraeli conjectured, a slight defence from the rigours of the atmosphere, or the annoyance of insects. The brightness of the blue induced the Celts to call the plant *Gwed*, a name still retained in France, where it is now sometimes termed *Gwesde*. The Anglo-Saxons appear to have called it *Wad*, or *Woad*. The German name for it is *Färberwaid*; and it is the *Guado* of the Italians. The Spaniard calls the plant *Pastel*, and it is also so called in some parts of France.

Woad is still sometimes cultivated in Lincoln, as the dye obtained from its leaves is a substitute for indigo; but its cultivation is rare, because the price of labour in this land renders it more expensive than the foreign dye. Before the introduction of indigo, however, woad was commonly raised in various parts of Europe, especially in Germany; but the introduction of that plant had a sudden effect in diminishing the use of woad. At first, indigo and woad were used together in dyeing; then came the plan of using certain salts instead of woad, which in the then state of science produced so much mischief by injuri ıg the cloths, that orders were issued by the Government of Thuringia, in the sixteenth century, that the use of indigo should be abolished; and it was in our country denounced as a dangerous drug, and ordered to be burned. Woad does not appear to have been a common crop in England at that time; and efforts were made to discourage its growth altogether. From the archives of the Corporation of Southampton, in 1597, it appears that a remonstrance was entered against the sowing of woad in Hogland, "because the common sort of people find themselves greatly grieved withal, for that, after woad-sowing, there will grow no grass, or anything else for the cattle to feed upon."

The flowers of the Woad are in panicles, and of a bright yellow. They grow on an upright stem, about two or three feet in height, and appear in June and July, small spear-shaped yellowish bracts growing among them. The plant is a native of the south and middle of Europe, in stony places, from Spain and Sicily to the shores of the Baltic Sea. It also grows in cultivated fields in many parts of Asia, but was probably introduced there among the grain.

16. Coral-root (*Dentária*).

Bulbiferous Coral-root (*D. bulbífera*).—Pod narrow and tapering; stem quite simple; lower leaves pinnated; upper leaves often with buds in the axils. Plant biennial. This rare and pretty spring plant has, in April and May, pale purple flowers, larger and darker than those of the Cuckoo-flower (*Cardamine pratensis*), but somewhat resembling them. The Coral-root, however, is very easily distinguished from other plants, by the little dark scaly buds which grow between the upper leaves and the stem, and which, when ripened, fall off and produce new plants. This plant grows in woods in Middlesex, Sussex, Herts, and some other English counties, as well as in a solitary Scottish locality in Ayrshire. The roots, which are of whitish colour, and creeping, have thick fleshy scales upon them, and the stem is about a foot, or a foot and a half, in height. Some very showy species are cultivated in gardens, with purple, white, or yellow flowers; and the root of a plant, called the Two-leaved Coral-root, is used by the Americans instead of mustard, and is called Pepper-root.

17. Bitter-cress (*Cardamine*).

1. **Large-flowered Bitter-cress** (*C. amára*).—Leaves pinnate, without stipules; leaflets of root-leaves rounded, those of the stem-leaves toothed, or angular; stem creeping at the base; style oblique. Plant perennial. The large white flowers, with purple anthers, at once characterise this plant. It blossoms in April and May, and is much less frequent than the next species, though, like that, usually found in moist places. It is very bitter and astringent.

2. **Cuckoo-flower** (*C. praténsis*).—Leaves pinnate, without stipules; root-leaflets roundish, and toothed, those of the stem nearly entire; style straight. Plant perennial. The song of the cuckoo, though monotonous, is delightful, and its two sweet notes—the only notes among birds which accord exactly with the musical scale—awaken, as they echo against the hill-side, feelings of joy in many hearts. No wonder that the oldest ballad in our language told of the bird, and said, "Well singest thou, cuckoo!" No wonder that old lovers of flowers, as they walked the spring meadow, associated many of its blossoms with the voice of the bird, and that cuckoo's-meat and cuckoo-flowers were in abundance by their path. Gerarde says of this *Cardamine*, that it "doth flower in April and Maie, when the cuckoo doth begin to sing her pleasant notes without stammering." Never is the green earth greener or more gay with delicate flowers than at this season, when the white daisy is open all over the fields, "like labour smiling on a holiday;" and the blue speedwells gleam like gems among the grass, and the fairy stitchwort nods

1. BULBIFEROUS CORAL ROOT
Dentaria bulbifera
2. LARGE FLOWERED BITTER CRESS
Cardamine amara
3. CUCKOO FLOWER
Cardamine pratensis
4. NARROW LEAVED BITTER CRESS
Cardamine impatiens
5. HAIRY BITTER CRESS
Cardamine hirsuta

Pl. 21.

by bluebells and primrose tufts. Shakspere speaks of the flower by another of its older names, and

"Daisies pied and violets blue,
And lady-smocks all silver white,"

were looked on by him, as by us, with joy. The origin of the name used by the poet is not so obvious as is that of Cuckoo-flower. Sir J. E. Smith supposes that this flower, growing in great quantities, and bleached by long exposure to the sun, suggested to our fathers the idea of linen laid out on the grass to dry. The plant is still commonly called Lady-smocks in country places; and more recent poets, like Millhouse, know it by the name familiar to their childhood—

"Joyous I've found the glossy crocus blowing
Fair in its bed of green; and onward stray'd
To sunny dells, where April's hand was throwing
Violets of virgin sweetness, and survey'd
The pale-eyed primrose, glistening in the glade:
Daisies, vermilion-tinged, were deem'd a prize
And pluck'd in triumph; while the sloe-bloom made
Garlands for mating birds, and thence would rise
Vouchings of parent love in anthems to the skies.

"And at sweet May-tide, when the cowslip hung
Its head in pensiveness, and crow-flowers bright
Along the expanse of lengthening meads were flung,
Mingled with lady-smocks and daisies white,
Lambsfoot and speedwell, and the lovely sight
Of hawthorn blossoms fragrant on the gale
Of eve; full oft I've wander'd with delight;
Nor, time regretting, will I e'er bewail
Those hours I loitering spent in woodland, mead and dale."

The poet was right, for hours spent in watching the flowers are not to be regretted. Many a lesson of God's love is learned among them; many a scene of beauty gathered thence, to be laid up as a store for future memories. Such sights and thoughts come with so healing an influence to the care-worn spirit, that we are not surprised at the assertion of Priest, "that, in all his extensive practice in insanity, he never met with an insane naturalist."

"Better for man,
Were he and Nature more familiar friends."

The leaves of the Cuckoo-flower are very pungent, but these, with many of their kind, were relished formerly as salad herbs. The flowers are usually of delicate pale lilac, veined with a darker lilac; sometimes they are of pinkish white, and when about to wither, quite white. They are very plentiful in moist meadows, and are sometimes double. When this is the case, their leaflets, as they come in contact with the ground, often produce new plants while still attached to the old.

3. **Narrow-leaved Bitter-cress** (*C. impátiens*).—Leaves pinnate; leaflets lanceolate, slightly cut, or entire, fringed; stipules at the base of the leaf-stalks. Plant annual. The moist rocks of some of our northern counties, and some parts of Scotland, are the recorded habitats of this rare flower. It has very small white blossoms during May and June, and the fringed stipules afford a distinctive mark to the species. It is called impatient, from the hasty manner in which the contents of the pod are jerked out.

4. **Hairy Bitter-cress** (*C. hirsúta*).—Leaves pinnate, without stipules; leaflets stalked and toothed, those of the root rounded and angular, those of the stem nearly sessile and narrower; pods erect. Plant annual. The long pods afford a good character for this species. "The valves of these pods," says Mr. Johns, in his "Flowers of the Field," "when ripe, curl up with an elastic spring, if touched, and fly off, scattering the seeds to a considerable distance." The number of seeds, and their ready dispersion, account for the abundance of this plant, which is common everywhere, and is to be found in flower all the summer, though the pods are more conspicuous than the blossoms. It does not, like most of the species, confine itself to moist lands, though these seem most favourable to it, as it withers much earlier in dry places, dying away by the end of April. The leaves of this species, also, are used as salad, and are far more agreeable in flavour than those of the Cuckoo-flower. The French call the plant *Le Cresson*, the Germans *Die Guachblume*, and the Italians *Cardamindo*. The plants are regarded by our continental neighbours, as well as by villagers in England, as possessing great stomachic virtues. Some very pretty forms are cultivated by gardeners.

18. Rock Cress (*Arabis*).

1. **Thale-cress**, or **Rock-cress** (*A. thaliána*).—Leaves oblong, somewhat toothed, hairy; root-leaves slightly stalked; stem branched; pods angular, twice as long as their stalk. Plant annual. This is a very common little herb on dry walls, bearing small white flowers from May to July. The stem is seldom more than six inches high. It is called in France *L'Arabette*, and in Germany, *Der Gänsekraut*. The Dutch term this, or another of the species, *Honigschub*, and it is the *Arabide* of the Spaniard. De Theis, in order to account for its botanical name, as well as that by which it is familiarly known in some countries, supposes that the plant is a native of Arabia, but this is a forced and improbable explanation. Some authors include this in the genus *Sisymbrium*.

2. **Hairy Rock-cress** (*A. hirsúta*).—Leaves all hairy and toothed; stem-leaves clasping, heart-shaped at the base, and numerous; pods erect and straight. Plant biennial. The Hairy Rock-cress is a stiff rigid plant, common on walls, rocks, and banks, in England and Scotland. It is about a foot in height, and bears small white flowers during June and July.

3. **Alpine Rock-cress** (*A. petræa*).—Root-leaves pinnatifid and stalked, with smaller lobes at their base; stem-leaves nearly entire, and sessile. Plant perennial. This species is found on the rocks of Scotland and Wales. It has white flowers, tinged with purple, which are rather larger than those of the Hairy Rock-cress, and it blooms from June to August. It is frequent on the high mountains of the west and north of Scotland, and is a slender plant, from four to six inches in height, sometimes quite smooth, but usually more or less hairy.

4. **Fringed Rock-cress** (*A. ciliáta*).—Leaves somewhat toothed, oval, smooth, and fringed with minute hairs; root-leaves obtuse, and nearly sessile; those of the stem either roundish at the base, or clasping; pods nearly erect. Plant biennial. The small white flowers of this species, which is rare, may

1 WALL CRESS.
Arabis thaliana.

2 HAIRY WALL CRESS.
A. hirsuta.

3 ALPINE ROCK CRESS.
A. petræa.

4 BRISTOL ROCK CRESS.
A. stricta.

5 FRINGED ROCK CRESS.
A. ciliata.

6 TOWER CRESS.
A. turrita.

Pl. 22.

be seen from August to September. It grows in Connemara, Ireland, and at Lidstep in Pembrokeshire. Its stem is from four to six inches in height.

5. **Bristol Rock-cress** (*A. stricta*).—Root-leaves waved and toothed; stem-leaves sessile; stems hairy at the base; pods erect. Plant perennial. This is very rare, growing on the limestone soil of St. Vincent's Rocks, near Bristol. Although it has been said to be found in some other places, it seems peculiar to this. It was formerly abundant on the rocks, but can now be seen on but few spots, as in a gully near the Sea Wall on the upper part of Durdham Downs, Clifton; or in the Leigh Woods on the opposite shore of the Avon. The root-leaves are edged with many strong but fine hairs. The plant flowers from March till May, and is much like the Thale-cress, but its blossoms are about twice the size of those of that plant.

6. **Tower Rock-cress** (*A. turrita*).—Leaves clasping the stem; pods slender, curved downwards, and flat, with the margins thickened; bracts at the base of the flowers. Plant perennial. This plant, which is a doubtful native, would seem to have some preference for the halls of learning, for among recorded habitats are the walls of Trinity and St. John's Colleges, Cambridge, and of Magdalen College, Oxford. It is well characterised by the form of its pods and its bracts. It blossoms in June. Flowers pale yellow.

19. Tower-mustard (*Turritis*).

Smooth Tower-mustard (*T. glabra*).—Root-leaves toothed, hairy; stem-leaves clasping, entire, and smooth. Plant annual. The only British species of this genus is very similar to the Rock-cresses, being distinguished from them by having the seeds in its pods arranged in two rows instead of one. It is rather a local than a rare plant, being generally distributed over England, though rare and doubtfully native in Scotland. Its flowers are yellowish white, and open in June. The somewhat pyramidal appearance of the leaves and stem of this plant probably originated its generic name, and its long pod has given to it also the name of Long-podded Mustard. The French call the plant *La Tourette*, the Germans *Das Thurmkraut*. It is the *Turrekruid* of the Dutch, and its Swedish name is *Rockentrap*. Many writers call it *Arabis perfoliata*.

20. Winter-cress (*Barbaréa*).

1. **Common Winter-cress** (*B. vulgáris*).—Lower leaves lyre-shaped, the terminal lobe roundish; upper inversely egg-shaped, toothed. Plant perennial. The angular stem, and dark, shining, smooth leaves, distinguish this plant from the wild mustard, which it much resembles. Its flowers appear from May to August, and are very numerous, and of bright yellow colour. The plant is often called Hedge-mustard, and is termed also Winter-cress, Yellow Rocket Herb, and Herb St. Barbara. The French call it *La Barbarée*, the Spanish *Hierba de Santa Barbara*, and the Italians *Barbarea*. It is common on moist waste grounds; and although its leaves are disagreeably bitter, it is said to be cultivated now in some countries for salad; and we well know that the young leaves were eaten in winter and early spring by our forefathers. It is not the English name alone which retains the memory

of the Winter-cress, for the plant is *Die Winterkresse* of the Germans, and the *Winterkers* of the Dutch, while it is commonly called *Vinterkurs* in Denmark. The leaves are, at the best, so nauseous, however, that when we taste them, we are ready to invoke blessings on the man who introduced the lettuce and the radish. In Sweden they are sometimes boiled as greens. Cows will eat the plant, but it is refused by horses. Baxter remarks of this Winter-cress, "A minute species of *Tipula*, or Gall-gnat, sometimes renders the flowers like a hop-blossom; but this metamorphosis does not strictly partake of the nature of galls, as it originates, not from the egg, but from the larva, which, in the operation of extracting the seed, in some way imparts a morbid action to the juices, causing the flower to expand unnaturally." He adds, that "a minute fungus, *Uredo candida*, is parasitical on the under side of the leaves, and on the stem of this plant, all the summer."

2. **Early Winter-cress** (*B. præcox*).—Lower leaves lyre-shaped, or pinnate; upper ones pinnatifid; segments linear, oblong, entire, obtuse, scarcely thicker than the flower-stalk. Plant biennial. This species is more slender than the last, and has narrower leaves. It is not uncommon in the west of England. Several of the cresses have been introduced among seeds into Australia; and Backhouse describes a perennial species, which has become a very troublesome weed there. *B. præcox* appears to be a cultivated form of *B. vulgaris*.

21. Cress (*Nastúrtium*).

* *Flowers white.*

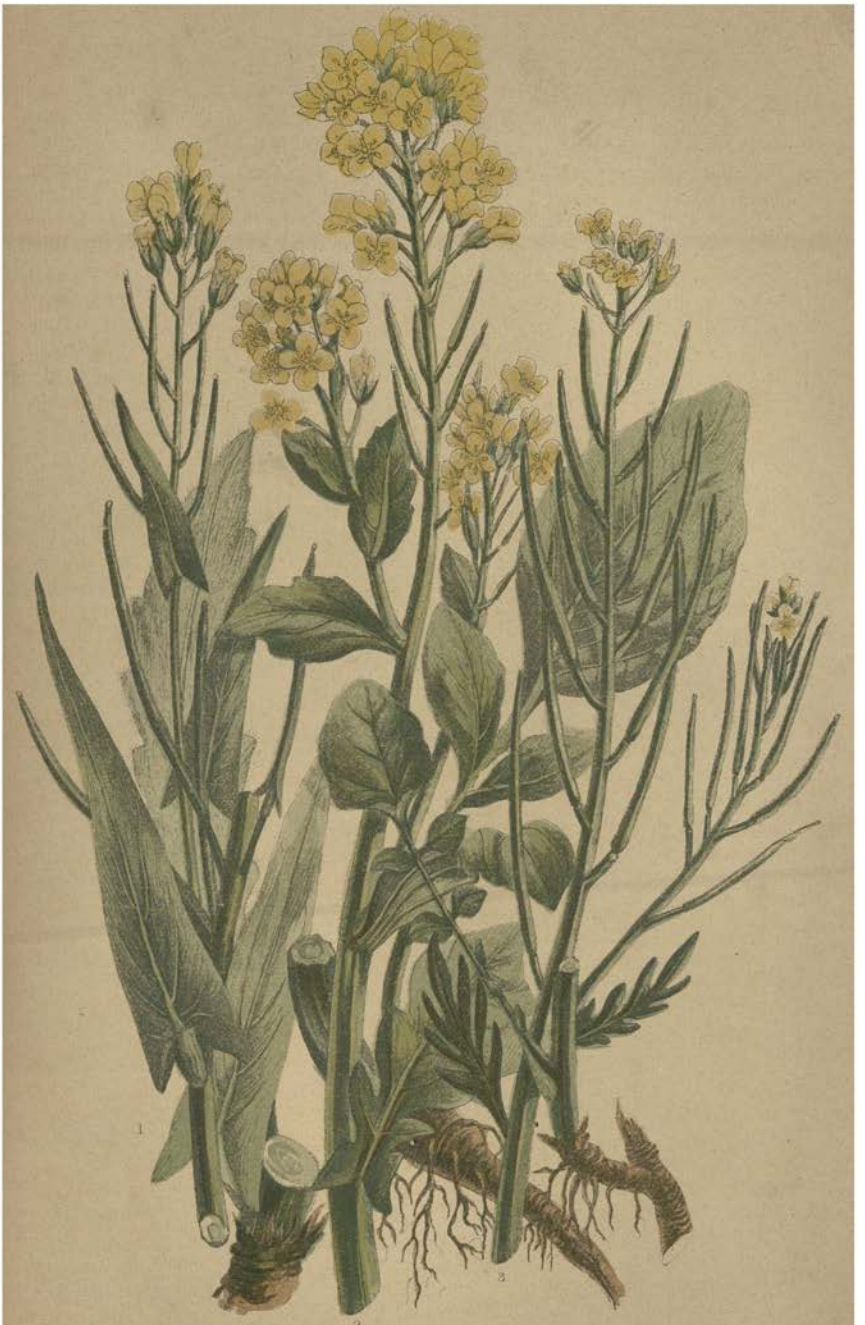
1. **Common Water-cress** (*N. officinále*).—Leaves pinnate; leaflets roundish, or oblong, toothed and waved; pods slender, about an inch long. Plant perennial. The small white flowers of this plant, though blooming from June to August, would scarcely be seen by any but a botanist. The Water-cress is found in many of our ponds and rivers, such as the poet has described—

> "The rivulet,
> Wanton and wild, through many a green ravine,
> Beneath the forest flow'd: sometimes it fell
> Among the moss, with hollow harmony,
> Dark and profound. Now, on the polish'd stones
> It danced, like childhood, laughing as it went.
> Then through the plain, in tranquil wanderings, crept,
> Reflecting every herb and drooping bud
> That overhung its quietness."

Sweet little nooks abound in our country where crystal streams are lying, and where—

> "The cresses, which grow where no man may see them,"

are springing up in plenty. The streams, indeed, are not always lined with verdure, especially in the neighbourhood of villages; yet sometimes, as we have looked even into these waters, gliding by the cresses, over some red tile or pieces of blue earthenware, and sweeping down the emerald grasses in their course, it has seemed as if the waters were flowing over a bright mosaic work, and we have thought of the good moral lesson drawn by Ruskin from the gutter of the city. "Even in the heart of the foul city it is not alto-



1. SMOOTH TOWER MUSTARD.
Turritis glabra.

2. COMMON WINTER CRESS.
Barbarea vulgaris.

3. EARLY WINTER CRESS.
Barbarea præcox.

Pl. 43.

gether base; down in that, if you will look deep, you may see the dark serious blue of far-off sky, and the passing of pure clouds. It is at your own will that you see in that despised stream either the refuse of the street, or the image of the sky—so it is with almost all other things that we unkindly despise."

But the water-cress stream, whether running by the wayside, or half hiding itself amid shadowing trees, is almost sure to be discovered by some poor woman who earns a scanty subsistence by gathering and selling the wholesome salad. In all countries, from Sweden to Greece, and in the streams among the hills of India, Brazil, Australia, everywhere may be found the water-cress. The Parisian calls it *Cresson au Poulet*, because he eats it with his roasted fowl; and the French peasant terms it *Cresson de Fontaine*. The substantial luncheon of the German is not without its *Brunnenkresse;* while its name of *Waterkers*, still used by the Dutch, was probably, too, its old English name, for, as Dr. Jacob has suggested, the vulgar proverb of not caring a "curse" for anything was doubtless originally not caring a cress, Chaucer referring to the plant by the old Saxon name of *Kers*. The Italians gave it the sweet-sounding name of *Crescione*, while it bears many a strange and uncouth name in some of the lands where the language shows the rudeness of the people.

That the water-cress has long been used as a salad, both herbalists and poets have told us. Robert Herrick, who in his later years lamented the "unbaptized rhymes" of his youth, has a little thanksgiving poem, beautiful for its simplicity, in which he alludes to it:—

"Lord, Thou hast given me a cell
Wherein to dwell;
A little house, whose humble roof
Is weather-proof,
Under the spars of which I lie,
Both soft and dry;
Where Thou my chamber soft to ward,
Hast set a guard
Of harmless thoughts, to watch and keep
Me while I sleep.
Low is my porch as is my fate,
Both void of state;
And yet the threshold of my door
Is worn by the poor,
Who hither come and freely get
Good words or meat.
Like as my parlour, so my hall
And kitchen's small;
A little butterie, and therein
A little byn:—
Some little sticks of thorn or brier
Make me a fire,
Close by whose living coal I sit
And glow like it.
Lord, I confess too, when I dine
The pulse is Thine,
And all those other bits that be
There placed by Thee—
The worts, the purslane, and the mess
Of water-cress.'

Generally acceptable, however, as are the pungent leaves of the water-cress, they could excite the most painful sensations in the mind of the learned Scaliger, who used to turn pale at the very sight of them. They are said, by Müller, to contain iodine; and the late M. Planche, and other chemists, have proved that they, as well as some other cruciferous plants, contain sulphur. M. Vogel, sen., remarking this fact, thought that as soils distant from volcanoes have not any perceptible traces of sulphur, it is not impossible that plants which are much disposed to assimilate it may have the property of deriving sulphur from the decomposition of the sulphuric acid of sulphates. M. Vogel, however, found afterwards, that seeds placed in a soil perfectly free from sulphur or sulphates, yielded plants which con-

tained a notable quantity of sulphur; water-cresses were of this description; and this chemist states that 100 grs. of water-cress seeds contained 0·129 gr. of sulphur. He adds that this is a perfect enigma to him, as the growth of the young water-cresses took place in a soil devoid of sulphur and sulphates, and in a room which contained no sulphureous vapour.

Since the year 1808, the water-cress has been largely cultivated by market-gardeners near London, Paris, Edinburgh, and other large cities; and Loudon mentions a pure stream which runs over chalk, near Rickmansworth, in Hertfordshire, in which one cultivator grew four acres, and sent thence a daily supply to the London market. When much exposed to the light, the leaves acquire a purplish brown tint.

* * *Flowers yellow.*

2. **Creeping Yellow Cress** (*N. sylvéstre*).—Leaves pinnate; leaflets lanceolate cut, those of the uppermost leaves almost entire; root creeping; pods long and narrow. Plant perennial. This is not a common cress either in England or Scotland, but it occurs on some waste places and river sides in both countries. The stem is about a foot high, branched and angular, and the yellow blossoms are open from June to August.

3. **Amphibious Yellow Cress, Great Water Radish** (*N. amphíbium*).—Leaves pinnatifid, or deeply serrated; roots stringy; petals longer than the calyx. Plant perennial. This plant has yellow flowers from June to August, and is much larger than the creeping species; and very remarkable for the long stringy roots, which, springing from the lower joints of the stem, run down into the soft soil on the margins of rivers.

4. **Annual Yellow Cress** (*N. terréstre*).—Leaves pinnatifid, somewhat lyre-shaped, unequally toothed; pods thick and oblong; root fibrous. This cress, which is about a foot high, bears from June to September small yellow flowers, of which the petals are not longer than the calyx. It grows in watery places, and is an annual.

22. Hedge Mustard (*Sisýmbrium*).

1. **Common Hedge-mustard** (*S. officinále*).—Pods downy, closely pressed to the stem; leaves hairy, deeply lobed, with the points turned backward, the terminal lobe large and roundish in the upper leaves, and oblong in the lower ones. Plant annual. Everybody knows this common wayside flower, or weed as most would term it, for it has little beauty to recommend it. It may be seen all the summer long, grey with the dust of the road, and looking very shaggy in its foliage; while the yellow flowers, on a stem one or two feet high, are almost too small to be noticed. It has the usual pungent flavour of the mustard plants; but in this case, that flavour is disagreeable. This species is of old renown as a medicinal herb, and has so much repute as a remedy for hoarseness and weak lungs, that the French term it *Herbe aux chanteurs*. Dr. Cullen recommends its use, when mixed with honey and sugar, for pulmonary affections. The Greeks gave the name of *Sisymbrium* to some plant which they prized, but assuredly they did not allude to this Hedge-mustard, for theirs was an aquatic, and had, apparently, a pleasant odour; and garlands of myrtle, roses, and Sisymbrium were

1. COMMON WATER CRESS.
Nasturtium officinale.

2. CREEPING YELLOW CRESS.
Nasturtium sylvestre.

3. ANNUAL YELLOW CRESS.
Nasturtium terrestre.

4. AMPHIBIOUS YELLOW CRESS.
Nasturtium amphibium.

Pl. 24.

deemed meet offerings to Venus. The monks, too, cultivated a plant called *Sisymbrium*, but as the water-cress and radish were formerly included in this genus, it was probably one of those plants. The highly-prized virtues, however, both of this species and another of the genus, the flixweed, render it not unlikely that it found a place in the monastery garden. An ancient plan of the monastery of St. Gall, near the Lake of Constance, an institution celebrated throughout Europe for its learned men and complete library, enables us to form an idea of the plants which were, in the ninth century, considered of most importance in the continental monasteries; and they were, doubtless, very similar to those valued in our country at the same period. Several vegetables yet in common use are included in this plan of the kitchen garden, for the monks had a great taste for horticulture, and were not slow to admit new plants, as, in some cases, people of later days have been — the potato was rejected with scorn, till Louis XV. of France recommended it in that country, by wearing amidst his courtiers a bouquet of its flowers; and till some Englishmen, spite of popular clamour, persevered in its culture here. In the thirteenth century, the religious order of the Cistercians were pre-eminent for their horticultural skill, and Neckam, an abbot, describes the chief esculents of those days as lettuce, rocket, mustard, water-cress, and hop. Some of these were cultivated at St. Gall. The plan referred to describes the physic-garden as consisting of sixteen beds, each of which has the name of some herb inscribed upon it, in the following order:—peppermint, rosemary, white lily, sage, rue, comfrey, penny-royal, fenugreek, rose, water-cress, or radish, or mustard (*Sisymbrium*), cummin, lovage, fennel, tansy, kidney-bean, savory. The beds of the kitchen garden were also marked out, and were thus arranged:—onions, garlick, leeks, shallots, celery, parsley, coriander, chervil, dill, lettuce, poppy, savory, radish, parsnip, carrots, cabbage, beet, corn cockle.

2. **London Rocket** (*S. irio*).—Leaves deeply lobed, with the points turned backward, toothed, and, as well as the stem, smooth; pods erect. Plant annual. This Rocket, which was formerly common about our metropolis, first appeared there after the Great Fire of London. In the spring succeeding that calamity, the young plants were seen everywhere rising up among the ruins, and in the summer the crop was so luxuriant, that it was supposed the whole of Europe did not contain so many specimens of the Rocket as were then crowded over the surface of London. It was at that time a great marvel to observing men; and after all that has been written on the subject of the sudden appearance of plants in particular spots, it is a marvel still. The fact is well known, but not accounted for, that a layer of quicklime thrown over a soil will produce white clover plants in abundance, when they had not before grown on the spot; and so, too, the burning of rubbish leaves ashes favourable to the growth of the Rocket. Baxter, in his "British Flowering Plants," mentions a circumstance analogous to that which succeeded the fire of London, as having occurred near Oxford Botanic Garden. "During the time," says this writer, "that the alterations were going on in the garden, last year, 1834, the rubbish was removed to a piece of ground on the outside of the walls. This rubbish as it accumulated was set fire to from time to time, and was frequently burning for two or

three days together, so that in the course of the season a considerable quantity of ashes was produced. Having received in the spring of the present year, 1835, a valuable collection of cuttings of nearly all the species of British Willows, from W. Borrer, Esq., of Henfield, Sussex, this was the only piece of ground which we could appropriate to a Salicetum; and, in order to prepare it for the reception of the cuttings, the ashes were spread regularly over the surface, and the whole of it was trenched over; in a short time the very spot on which the rubbish was burnt produced an abundant crop of *Sisymbrium irio*, and that on a part of the garden where I never remember seeing it before."

The London Rocket is a leafy plant, about two feet in height, bearing small yellow flowers in July and August. It grows in waste places, but is not frequent.

3. **Fine-leaved Hedge-mustard, or Flixweed** (*S. sophia*).—Leaves twice pinnatifid, and slightly hairy; petals shorter than the calyx; pods slender, and erect. Plant annual. There is little to attract us in this species, but it is of easy recognition, having a most marked character. It is a slender plant, about two feet high, branched, and bearing small yellow flowers, from June to August; and its leaves are divided into narrow segments, a circumstance very unusual in the cruciferous tribe. It is not uncommon in waste places in England, though somewhat so in Scotland; and, as the Rev. C. A. Johns has remarked, its "numerous erect pods, when ripe, have the appearance of being beaded, from the great number of projecting seeds." It had a name among the herbalists expressive of some virtues which we in modern days do not discover, for they termed it *Sophia Chirurgorum*, the Wisdom of Surgeons; and one of them, who says that Paracelsus extols it to the skies, adds, "it is fitting that syrup, ointment, and plaisters of it were kept in your houses." It has been thought serviceable in hysterical cases, but its chief repute was for healing wounds. Its seeds, powdered and mixed with gunpowder, are said to increase its explosive force; it is probable that they contain sulphur, as do those of some allied plants.

23. Treacle-mustard (*Erýsimum*).

1. **Worm-seed Treacle-mustard** (*E. cheiranthoides*).—Leaves narrow and oblong, slightly toothed, rough, with starry three-forked hairs; pods erect, on spreading stalks; seeds small and numerous. Plant annual. It is from this plant that the familiar name of the whole genus is derived, as it was formerly one of the ingredients of the famous Venice treacle. The name of Worm-seed refers to the uses of the seeds in medicine. The plant is not uncommon in this country, on waste places, and cultivated lands, and frequently grows among osiers and willows, varying much in size, according to soil and situation. The stem, which is much branched, is from half a foot to two feet in height, and the flowers are very small and numerous, and appear in July and August. They are yellow, with whitish sepals, and the foliage is of a dull green tint. It is by many writers thought to be not indigenous, but it has long established itself in most of the countries of Europe, as well as of North America. The leaves are pungent, and their

1 COMMON HEDGE MUSTARD.
Sisymbrium officinale.

2 LONDON ROCKET.
Sisymbrium Irio.

3 FLIXWEED.
Sisymbrium sophia.

Pl. 25.

juice is acrid, though less so than that of some other species, which will raise blisters on the skin.

2. **Garlic Treacle-mustard, Jack-by-the-Hedge,** or **Sauce-alone** (*E. alliária*).—Leaves broadly heart-shaped, large, strongly veined, and stalked, with numerous broad teeth; pods erect, on spreading stalks. Plant annual. Most persons who are accustomed during April and May to hunt the hedge-row for the hidden violet, have met with this Garlic Treacle-mustard. It is well if, at some time or other, the spring nosegay has not been spoiled by its offensive odour, for the garlic-like scent not being perceptible till the plant is bruised, may not have been discovered till too late. If crushed, however, its scent is most disagreeable, and as powerful as the strongest garlic. The flowers grow in clusters, and are of pure white, and the stem is about a foot or more high. Its name of Sauce-alone was given from its uses, and to some who cannot afford more costly condiments, it is serviceable in adding flavour to the frugal diet. It is often the labourer's "sauce," and is eaten with their rustic dinner by some of those who, as Wordsworth reminds us—

> "The poor men's children, they, and they alone,
> By their condition taught, can understand
> The wisdom of that prayer that daily asks
> For daily bread."

Sometimes this Hedge Garlic is used as a salad herb with lettuce; and Neill says that it makes an excellent vegetable when boiled and eaten with mutton, or salted meat. The author has often eaten it thus during childhood, as well as when cut up into small pieces; and, mixed with vinegar, it has been served up like mint sauce. Linnæus ascertained by his experiments that cows, sheep, and poultry feed on it, but that it is refused by horses and goats. It is not a desirable herb, however, on the pasture, as it gives a strong flavour of garlic to the milk of the cow, and the flesh of the fowl. It was very much prized in the olden times for its medicinal virtues, its seeds being thought useful in several maladies; while even in the present day the leaves are commonly used in villages as an external application for sore throat, and also for wounds. A species of *Erysimum* was prized by the ancients, but this appears to have been our garden cress, *Lepidium sativum;* for Pliny tells us that the Gauls called his Erysimum *velar*, and this cress is still called *vilhar* in the Basque tongue, and *beler*, or *veler*, in some provinces of France. Our Jack-by-the-Hedge grows in hedges and ditches throughout Europe. The Germans call it by several names, as *Knoblauchkraut, Knoblauchshederich, Leuchel, Waldknoblauch, Rampen, Ramschelwurz, Germsel, Salzkraut, Sasskraut.* In France it is termed *L'Alliaire*, and *L'herbe aux Aillets.* The Dutch call it *Steenraket*, the Italians *Erisamo*, and the Spaniards *Jaramago.* This plant is by many botanists made a distinct genus, under the name of *Alliaria.*

3. **Hare's-ear Treacle-mustard** (*E. orientále*).—Leaves elliptical, heart-shaped, obtuse, clasping the stem; root-leaves inversely egg-shaped; all smooth and undivided. Plant annual. This species, which is about a foot high, is not British, yet is found as a casual on cliffs, or in fields. It occurs in some parts of Ireland, and in various places on the coasts of Essex,

Suffolk, and Sussex. It is a native of the South of Europe. The flowers are small, white, or cream-coloured, and the leaves have the pale sea-green powdery bloom on their surface which the botanist terms glaucous. There are about seventy species of the genus *Erysimum*, and several are very pretty garden plants, with yellow, white, or purple blossoms, the smaller ones being very ornamental to rock work.

24. WALL-FLOWER (*Cheiránthus*).

Common Wall-flower (*C. chéiri*).—Leaves lanceolate, acute, entire, downy; pods long and narrow; stem shrubby at the base. Plant perennial. Who has not welcomed the scent of the Wall-flowers, as it was brought to him on the spring breezes, in his wanderings by the old tower, when they quivered to the passing winds, from ruined hall or ivied church? We can all recall places where it grows thus high above us; and the thought can awaken associations connected with spots where,

> "The house of God uplifts its ancient walls,
> Wreath'd in the verdant honours of the year;
> Within the sacred fane have race on race,
> The children of the upland and the dale,
> Devoutly worshipp'd; and beneath the mounds,
> The grassy mounds, which stud the village yard,
> Withdrawn to rest at last."

Nor is it in our own loved land only that the Wall-flower is associated with the buildings reared by men of other days. The traveller among the ruins of ancient Rome is gladdened by its scent and beauty; and broken walls and fallen capitals have the Wall-flower waving on the summits, while the vermilion-spotted mignonette blends with its own sweet odours. The traveller in Eastern lands sees it amongst the oriental flowers, still loving the old wall better than any other place, and affording to the Eastern poet as many an image and sentiment of loveliness as was gathered by the troubadour, or is caught by the bard of our days and country.

But though the Wall-flower, as its name imports, springs from walls, yet the sea-cliffs afford it as welcome a place of growth. Many a crag and peak is enlivened in the early spring by its clumps of yellow flowers; and in March and April the old cliffs of Dover, among whose shadows, or in whose broad sunshine, lies many a lovely blossom, are rich with thousands of its blooms. Our fathers called it the Winter Gillyflower—for it may be seen while wintry winds are still uttering their wild music; and March Gilly-flower, which is another of their old names, is equally appropriate. The flower when truly wild is rarely tinged with iron-brown—we never saw it so on the Wall-flower of Dover; but the variety which is cultivated in gardens has the deeper tint, and is less firm in its aspect, its petals becoming more flaccid. Yellow Violet and Yellow Stock Gillyflowers were others of its old names; and the Dutch now call it *Violier*, while it is the *Giroflée* of the French, and *Die Leucoje* of the Germans. Its home is in central and northern Europe, and it is not truly British.

The Wall-flower is of little economical use, though recommended to be planted in pastures, as the leaves are beneficial in some cases to sheep. Our forefathers attributed to it various virtues; and a conserve made of the

1. WORM-SEED TREACLE MUSTARD.
Erysimum cheiranthoides.

2. GARLIC TREACLE MUSTARD
E. alliaria.

3. HARE'S-EAR TREACLE MUSTARD.
E. orientale.

Pl. 26.

flowers was used as a remedy both for the apoplexy and the palsy; and was esteemed "a singular remedy for the gout and pains in the joints and sinews." But though we no longer use its petals for medicine, and cannot eat its pungent leaves, yet we regard its beauty and sweetness as its uses. The time was when men believed that every plant had its known or unknown virtues, and thought that they honoured the Great Creator by thus believing. But it is proof enough for us of God's goodness that the flower can charm the eye and elevate the thought, that it can soothe the sorrow, or awaken the memory; that it can whisper to us a tale of His love and care for the flowers of the field, and a blessed assurance that we and our least concerns are under His watchful eye, and share in His ever-present goodness. And so our walks over hills and meadows, by sea-cliff or rural stream, shall teach us more of Him by means of His sweetest gifts.

The Wall-flower was early cultivated in the English garden, and is yet, in its rich varieties of brown and yellow and double and single blossoms, a favourite plant of the border. The little garden plots in the city or in the square send forth fragrance from its petals, though sometimes, as we see them, we are reminded of Elliott's description:—

"But mourning better days, the widow here
Still tries to make her little garden bloom—
For she was country-born. No weeds appear
Where her poor pinks deplore their prison tomb;
To them, alas! no second spring shall come;
And there in May the lilac gasps for breath,
And mint and thyme seem fain their woes to speak
Like saddest portraits painted after death;
And spindling Wall-flowers, in the choking reek
For life—for life uplift their branches weak."

The troubadours were very fond of the Wall-flower, and the old Provençal ballads told its praises, nor have men of modern times left it unsung. Moir thus says of it—

"Sweet Wall-flower, sweet Wall-flower!
Thou conjurest up to me
Full many a soft and sunny hour
Of boyhood's thoughtless glee,
When joy from out the daisies grew
In woodland pastures green,
And summer skies were far more blue
Than since they e'er have been!"

25. Stock (*Matthiola*).

1. **Hoary Shrubby Stock** (*M. incána*).—Stem shrubby; leaves hoary with down, long and narrow, entire; pods without glands. Plant perennial. This Sea-stock waves its light purple flowers on the southern shores of our island, bearing too much resemblance, both in form and odour, to the common Stock of the garden, to leave any doubt as to its name. It is found on the southern seashore of the Isle of Wight, especially about Niton; and grew formerly on cliffs to the eastward of Hastings; in the last named place it is apparently extinct, as it is also on the cliffs at the east of Ramsgate, where it once grew. It flowers in May and June, and is the origin of the Stocks of the garden—

"The white and purple gillyflowers, that stay
In blossom—lingering summer half away;"

and is there treated as an annual or biennial; and cultivated in the flower borders of both rich and poor.

Often, as the scent comes to us from some rich Double-Stock, we are reminded of the regard which Baron Cuvier had for this plant. It had been the favourite flower of his mother; and the great naturalist never forgot that that mother first directed his thoughts to the observation of nature. Her loved flower was prized by him to his latest day of life, and so long as it was in season his table was never without its fragrance.

"A flower is not a flower alone,
A thousand thoughts invest it."

The French call the Stock, *Le Giroflée;* our old writers term it Stock Gillyflower. In all old books on gardens we find how much it was prized; and it is not possible to read the literature of past centuries without discovering how garden-flowers were valued then, though comparatively few but simplers noticed the wild flowers. In an old work called "Delightes for Ladies to adorne their Persons and Closets and Distillations, with Beauties, Banquets, Perfumes, and Waters," we see how ladies of the olden time amused themselves with roses, pansies, and Stock Gillyflowers; and how, instead of making the modern compound of pot-pourri, they occupied themselves in "preserving single flowers without wrinkling." The author, Sir Hugh Plat, says, "I find the red-rose leafe best to be kept in this manner; also take away the stalks of pansies, stocke-gillyfloures, or other single floures; pricke them one by one in sande, pressing down their leaves smooth with more sande laid evenly upon them; and then you may have rose-leaves and other floures to laie about your basons, windows, etc., all the winter long." The mode prescribed for preparing these leaves was to wash some "Callis sand," and placè it in a shallow square box, about six inches deep, and having made the sand level, to lay the petals of the flowers separately on the surface, placing a layer of sand over each layer of petals. The whole were to be covered at top with a mass of sand, and to be set in the sunshine on a hot summer's day, and after a few days the dried flowers were to be carefully removed without breaking. Something of a *hortus siccus*, on a more extensive scale, was also directed to be made in like manner; for the author adds, "Also this secret is very requisite for a good simplifier, because he maie drie the leafe of any hearbe in this manner, and laie it very drie in his Herball, with the Simple which it representeth, whereby he may easily learn to know the name of any simple which he desireth." Happy the student of plants in our days, who needs to practise no such elaborate and uncertain methods of discovering the names of plants, but may find them all ready arranged for him in his Flora; and taking his book in hand, may wander forth and learn the characteristics and properties of every flower of the field. The leaves of all the Stocks may be used, say our botanists, for salads or pot-herbs; that is, they are wholesome, but few would think them any addition to the dish of lettuce or endive. The genus *Matthiola* was named from the Italian physician of Ferdinand of Austria. He died in 1577, after having published a "laborious commentary" on Dioscorides; and commentaries in those days

1 WALLFLOWER
Cheiranthus cheiri

2 HOARY SHRUBBY STOCK
Matthiola incana

3 GREAT SEA STOCK
Matthiola sinuata

Pl. 27.

were indeed laborious, both to the writer and reader. Matthiolus was held in high repute as a botanist, and the beautiful Stocks, such as our Annual Garden, Brompton, Winter, and Purple Gillyflowers, are appropriate remembrances, and have remained on our beds amid all those changes of fashion which affect even flowers. The little garden flower used as an edging for the bed, and called the Virginian Stock, is properly the Mediterranean Stock (*Malcolmia*). It has been found apparently wild on some sea-cliffs near Dover, but was certainly introduced there either by human hand, or by some of those aerial messengers which waft plants hither and thither.

2. **Great Sea-stock** (*M. sinuata*).—Stem herbaceous, spreading; leaves oblong, downy, the lower ones somewhat lobed; pods rough with prickles. Plant biennial. It is on the sandy coasts of Wales and Cornwall that we must look for this rare Stock. It is night-scented, and very sober tinted, its blossom being of dull purple, and opening in the month of August. It is not, like many night-scented flowers, closed during day-time, but is like the blossoms of the lime-tree, the moschatel, and the musk mallow, in which the scent seems to increase as the dews of evening descend upon the petals. Through the night, too, its odour is perceptible, though this is not so powerful as in that singular species of the South of Europe, the Night-flowering Stock (*Matthiola tristis*), which is all day like a withered flower, and needs the air of night to freshen it into vigour and sweetness. Linnæus named night-blooming flowers *flores tristes*, and many deserve this name in a peculiar manner, like this Stock, by their dull colour. But all are not, at least in this sense, sorrowful flowers; for that most magnificent of blossoms, the night-flowering cereus (*Cereus grandiflora*), whose beauty is never revealed in the day-time, and whose full glory of hue and fragrance is attained at midnight, is of a beautiful white hue, and has a coronal of golden stamens. Of all night flowers it is the queen, and its scent is far more powerful than that of any plant of our country. The dawn of morning, which bids so many flowers unfold, is a warning to the night-flower to close its petals; and Scented Night-stock and cereus are then scentless, and the latter even faded. Little beauty as our Great Sea-stock may have to attract the eye of the wanderer, yet its odour renders it welcome to those who ramble forth to see the moonlight on the waters. It is not on the shore that we expect the odour of flowers, any more than the singing of birds. Both sounds and sweet airs of the country must yield here to the music of winds and waters, and the odour of the salt sea waves. Little scent comes from the cliff or sand, either by day or night, save that of an occasional clump of white Burnet roses, which sometimes stud the shore, or, on some rare spots, the powerful odour of the night-flowering catchfly, or this large Stock.

26. Cabbage; Turnip Navew (*Brássica*).

1. **Common Wild Navew** (*B. campéstris*).—Stem-leaves heart-shaped, tapering to a point, clasping, glaucous; root-leaves lyrate, toothed, somewhat rough; pods erect. Plant annual. This plant, during June and July, when it is in flower, is so much like the common charlock as to be easily mistaken for it. The smoothness and sea-green tint of its upper leaves serve as a distinction, for all the foliage of the charlock is rough. The Navew is common

on field-borders, in corn-fields, and ditches. It has several varieties; one of them, the *Brassica oleifera*, called the *Colsa*, or *Colza*, is one of the plants cultivated for the sake of its seed, known as Cole-seed, which yields a large quantity of oil. The leaves of this plant are also used as fodder for cattle, and the stalks are burned for manure. It is thought to be the origin of the Swedish turnip of our agriculturists, and its root, which in its wild state is spindle-shaped, becomes, under culture, turnip-shaped. Sir William Hooker and Dr. Arnott remark, that, in Scotland, it has never been found, except where the Swedish turnip had been previously cultivated.

2. **Sea Cabbage** (*B. olerácea*).—Root stem-like, fleshy; leaves lobed, waved, smooth, and glaucous; upper ones sessile, and oblong. Plant biennial. Few plants are more conspicuous on some of our sea-cliffs than this Cabbage. On many of the cliffs of Devonshire, Cornwall, Wales, and Yorkshire, it is plentiful; and on the lofty heights of Dover, it is, from May till the end of summer, one of the loveliest ornaments of the cliffs. Its large panicle of lemon-coloured blossoms contrasts beautifully then with the pink centaury, and purple knapweeds, and the rich blue of the bugloss, which overtops them all. In winter, too, the old white cliffs receive some additional beauty from the foliage of this plant. Much of it is yet verdant when all around is fading; and dark, purplish, red-tinted leaves mingle with those which are green, and with others which are of deepest yellow, and please the eye by their varied hues and graceful forms; and when the hoar-frost spangles them, they seem enriched with glittering diamonds. The wind revels among the cliffs, rattling as it passes the old withered stalks, which in the last summer were gay with the flowers, but which now stand out from the crevices like the naked boughs of some shrub. In summer, the large blossoms may be seen far away up the cliff, hanging out from its very summit; or we may look at them as they cluster close by its base, or among the shingle and sand, just above the high-tide mark, but often dashed by the spray when winds are wild. The leaves have a salt and bitter flavour, but repeated washings will fit this Cabbage for use, and when boiled it is a good vegetable. Boys occasionally gather it from the cliff, and carry it into the town for sale; but it does not seem to be much used in the neighbourhood, either by rich or poor. The common Cabbage butterfly, *Pieris brassicæ*, the caterpillar of which makes so much havoc in the kitchen garden, does not neglect the Cabbage of the cliff, though it appears to prefer the cultivated plant. This the author had the opportunity of remarking in the summer of 1851, when a little garden on the cliff side, redeemed from the waste, and carefully tended by an industrious cottager, was visited by this caterpillar. A large piece of land had been planted with rows of Cabbages, but not a single plant was uninjured. The whole produce was completely destroyed by the ravages of the devouring insects, while hundreds of wild Cabbage plants bloomed around with leaves unharmed, or only here and there betraying marks of the destroyer.

The Sea Cabbage, small as it is, with its few scattered leaves, is important as having been the origin of all the giant and small Cabbages, both white and red, of Savoys and Brussels Sprouts, and delicate Cauliflowers and Broccoli, and all the varieties of greens which the gardener raises with so much care.

1 COMMON WILD NAVEW
Brassica campestris

2 SEA CABBAGE
Brassica oleracea

3 ISLE OF MAN CABBAGE
Brassica monensis

4 RAPE OR COLE SEED
Brassica napus

5 COMMON TURNIP
Brassica rapa

Pl. 28.

Few who look on it as it grows on the cliff would believe that culture could effect such changes; but from earliest days it has received cultivation. There is no doubt that the *Brassicæ* of the ancients belonged to the Cabbage genus, though it would, indeed, be a waste of labour to attempt to discover to which of the kinds the Greek and Roman writers allude. Indeed, in the lapse of ages, so many new sorts have arisen, and, doubtless, so many old ones been lost, that it is impossible to tell whether that Cabbage which the ancients ate raw to prevent intoxication is that of which the modern German makes his *sauer kraut*, or which the Turk pickles for his winter food, or which the Englishman boils for his "greens." We know that the ancients had a curled Cabbage; they therefore, probably, dined sometimes on Broccoli. Our Cauliflower was brought from the Levant into Italy about the sixteenth century, and gradually found its way into England, though it was long a rare vegetable, and seems to have been unknown to Conrad Gesner; while it was regarded by Bauhin as so rare, that he particularly names the garden where he saw it growing. In Tarragona, this vegetable is said, in our day, sometimes to weigh as much as forty pounds.

Numerous varieties of *Brassica* have been, and still are, produced by gardeners. There are Thousand-headed and Hundred-leaved varieties reared for cattle. There are Drumheads, and various Red and White Cabbages and Cauliflowers, cultivated for our vegetable diet, and Savoys for our winter use. Our continental neighbours have produced their Ribbed Kale, and the Brussels Sprouts are unexpanded leaf-buds of a common variety of Cabbage. The celebrated *Kohl-rabi*, or Turnip-stemmed Cabbage, has been, of late years, introduced into this country as food for cattle; and, when young, is sometimes cooked for our tables. There are Scotch Kales, Tree Kales, and Palm Kales, which last are sometimes ten or twelve feet in height; and the Cæsarean Cow-cabbage, which is described as attaining in La Vendée the enormous height of sixteen feet; and these plants are somewhat palm-like in the tufts of leaves which surround their stems. The inner portion of these Cabbages, their "hearts," as they are termed, are good for the table, and the outer leaves are given to cattle. It is principally for these outer leaves that the Palm Kale is cultivated in Jersey.

The French have, like our own gardeners, a large number of varieties of Cabbage under culture; and their *Choux verts*, their *Choux de Milan*, their *Cavaliers Roquettes*, and various others, are in common use.

Our wild Cabbage grows on the sea-cliffs of several parts of the shores of Europe, and other wild Cabbages grow on more distant shores. The Cabbage plant, too, is a frequent object of culture in the East. Mr. Fortune, in his "Wanderings in China," says that one of the Cabbage tribe, *Brassica chinensis*, is extensively cultivated there, both in the province of Chekiang and also in Kiangse, and in great demand for the oil which is pressed from its seed. Its stems are three or four feet high, with yellow flowers, and long pods; and he remarks, "In April, when the fields are in bloom, the whole country seems tinged with gold; and the fragrance which fills the air, particularly after an April shower, is delightful."

3. **Isle-of-Man Cabbage** (*B. monénsis*).—Leaves pinnatifid and glaucous; stem nearly leafless, prostrate; pods 4-angled, 1 to 3-seeded. Plant

perennial. This species is found on some parts of the north-west shores of our island, growing on the sand. Its bright, lemon-coloured flowers are streaked with purple, and it blossoms in June and July. It is eaten by sheep and cattle with great avidity.

4. **Rape or Cole-seed** (*B. nápus*).—Leaves smooth, somewhat glaucous, lower ones lyrate and toothed, upper ones narrow and heart-shaped, clasping; pods spreading. Plant biennial. The slender-rooted variety of this Cabbage is so much cultivated for the oil produced by its seeds, that we have many of the young plants in our corn-fields and waste ground, though the species is not truly wild. It has small yellow flowers in June and July, and its stem is about one or two feet in height. The whole plant is, in winter, useful as fodder for sheep, and is sometimes sown for spring salads, like mustard and cress. It is sometimes called Reps or Navette.

5. **Common Turnip** (*B. rápa*).—Root fleshy, round or oblong; root-leaves lyrate and rough; lower stem-leaves cut, upper ones ovate, heart-shaped, and clasping. Plant annual. This is not truly a British plant, though often found wild on field borders, and it is probably a variety of *B. campéstris* or *B. nápus*. Our Common Turnips, so valuable to the agriculturist, in all their various tints of white, yellow, green, black, and red, are varieties of *B. rápa*. Some of them are flat or roundish in form, others are oblong, and are termed Decanter or Tankard Turnips. Their importance in husbandry, their value as food, both for man and animals, have rendered the culture of this vegetable very general, both in this and other European countries. The roots are too well known on our tables to need any commendation, and the young green tops are also eaten. The loud cry of 'Buy my turnip-tops!' is one of the familiar sounds of the city on the early spring morning; and, though slightly bitter, yet these leaves form a pleasant as well as wholesome vegetable, and are much better when procured from the open field than the garden. Sir Humphry Davy ascertained that a comparatively small amount of nutritious matter was contained in the Turnip—not more than forty-two parts in a thousand. It is probable that the Romans first cultivated the vegetable in this country; and there seems no reason to doubt that this was the plant known to them by the name of Rapa, though we have in modern times a much larger variety of kinds than they had. Their ancient writers strongly recommend the extensive growth of the Turnip, because, as they said, those roots which were not required for human food could be given to cattle; and both Columella and Pliny state that the Turnip was to be considered as next to corn in value and utility. Pliny mentions some of the Turnips of his times as weighing forty pounds each—a size never reached by the Turnips of modern days; though a Turnip grown in Surrey, in July, 1828, is described as twenty-one pounds in weight, and one yard in circumference. It is well known that several plants introduced by the Romans were lost for a period, and their culture afterwards renewed; but it is quite probable that the cultivation of this was at no time wholly discontinued. It is certain that the root was grown in this land during the sixteenth century; but about that period several vegetables now in use were introduced by the Flemish, so that we cannot be assured that this was not among that number. The Turnip is mentioned by several writers at the latter end of that century.

Cogan, in his "Haven of Health," published in 1597, says, that although many men love to eat Turnips, yet do swine abhor them. From Gerarde's "Herbal," published at the same time, we may infer that more than one variety was cultivated in the neighbourhood of London at that period. "The small Turnep," he says, that "grows by a village near London, called Hackney, in a sandie ground, and is brought to the crosse in Cheapside by the women of the village to be solde, is the best that I ever knew." Turnips have been used very extensively as food in seasons of dearth. Thus, in the years 1629—30, when there was a great scarcity of provisions in England, excellent white bread was made of these roots, which for this purpose were boiled, and, the moisture being expressed, were kneaded with an equal quantity of wheaten flour. They were also thus eaten in Essex at a much later period.

St. Pierre, speaking of the beauties of the vegetables of the north of Europe, describes some very richly tinted roots of the Turnip. "Nature," he says, "to indemnify these countries for the scarcity of apparent flowers, of which it produces but a small number, has bestowed their perfumes on several plants, as the Sweet Reed (*Calamus aromaticus*); the Birch, which in spring emits a strong smell of roses; and the Fir, the apples of which are sweet-scented. She has likewise diffused the most pleasing and the most brilliant colours of flowers on the most common of vegetables, such as the cones of the Larch, which are of a beautiful crimson, on the scarlet berries of the Service-tree, on the Mosses, the Mushroom, and even on the Swedish Turnip. On the subject of this last vegetable, hear what the accurate Cornelius le Bruyn says in his voyage to Archangel:—'During our residence among them (the Samojedes), they brought us several species of Turnips of various colours, and of surprising beauty. Some were violet, like our plums; others gray, white, yellowish; all were streaked with red, like vermilion, or the most beautiful lake, and as pleasing to the eye as a carnation. I painted some of them on paper in water-colours, and sent a quantity to Holland, in a box filled with dry sand, to one of my friends, a lover of this kind of curiosities. I carried my paintings to Archangel; when nobody would believe they were copied from nature, till I produced the Turnips themselves—a proof that very little attention is there paid to the rarest and most curious productions of Nature.' These Turnips I take to be of the species called *Ruta baga*, or Swedish Turnip, the bulb of which grows above the ground—at least, I presume so, from the drawing which Le Bruyn himself gives of it, and because I have seen such in Finland. They are superior in taste to our cabbage, and have a flavour similar to the hearts of artichokes. I have produced these testimonies of a painter, and that painter a native of Holland, on the beauty of these colours, to overthrow a prejudice which is so general, that in the Indies alone the sun gives a magnificent colouring to vegetables."

27. MUSTARD (*Sinápis*).

1. **Wild Mustard** or **Charlock** (*S. arvénsis*). — Leaves rough, and toothed; pods with many angles, rugged, and knotty, longer than the awl-shaped beak; stem bristly. Plant annual. This Charlock is too frequent

in the corn-fields, its yellow flowers gleaming there all the summer long. It is, like all Mustards, very pungent, and might be cultivated for its seeds, but that their flavour is not so pleasant as that of the species commonly reared for the mustard of our tables. The flowers look bright among the green spring blades, and at the later season have such floral companions as the poet has described :—

"Earth is very beautiful amid these steeps and valleys!
Golden wheat now quivers rip'ning in the sun.
Up yon hazel'd slope the farmer loudly rallies
Reapers to their morning task; lo, it is begun!
Wild flowers around their varied tints are showing,
Sweeps of yellow Charlock around the fields are seen,
The scarlet hoods of poppies, 'mid dark green turnips glowing,
Are brighter than the ruby gems that deck an Indian queen.
Earth is very beautiful
Amid her valleys green!"

The Charlock is, in various counties, termed Cherlock, Garlock, Chadlock, or Cadlock. In Yorkshire it is called Runsh, and in many places is known by the name of Corn-mustard. Its young tops are boiled and eaten by country people.

2. **White Mustard** (*S. álba*).—Pods bristly, rugged, spreading, shorter than the flat two-edged beak; leaves pinnatifid. Plant annual. This plant grows on waste ground and by field borders, and has large yellow flowers in June: its young leaves are used as salad.

3. **Common Mustard** (*S. nígra*).—Pods quadrangular, smooth, slightly beaked; lower leaves lyrate; upper, linear, smooth. This species and the last are the plants commonly cultivated for the mustard of commerce, and large fields are sown for this produce, in Essex and other counties. The pungent seeds consist of a mucilaginous and farinaceous substance, combined with a bland fixed oil, and a volatile or essential one, of great pungency, in which sulphur is said by Müller to exist to the amount of about thirty per cent. The acridity of this latter oil is increased if the seeds are kept some time after they are gathered, or it is at once developed by steeping the seeds in vinegar. The seeds when prepared for use are first dried in a kiln, and ground to powder; when, by some delicate process, the black husks are removed. In France this process is either ill understood, or the husks are retained because they possess greater pungency than the inner portion of the seed; the French mustard is consequently stronger than ours, but not of so good a colour. Our English word "mustard," as well as the *moutarde* of the French, is derived from *mustum ardens*, "hot must;" the sweet must of new wine having been an old ingredient of the condiment, as used in France. In our country it is often prepared for the table by the admixture of the juice of horse-radish, or other pungent substances, as well as with milk; but when this is used, the preparation is only fit for immediate use.

The seeds of both this and the White Mustard have been used medicinally; and, like many other remedies whose properties are apparent, they have often been taken in total ignorance of the disease for which they were applied; and though in many cases unobjectionable, or even useful, have in some produced evil consequences. Professor Wheeler has recorded in the Chelsea Catalogue instances in which the use of mustard-seed proved fatal.

1. WILD MUSTARD.
Sinapis arvensis.

2. WHITE MUSTARD.
Sinapis alba.

3. COMMON MUSTARD.
Sinapis nigra.

4. NARROW LEAVED WALL MUSTARD.
Sinapis tenuifolia.

5. SAND MUSTARD.
Sinapis muralis.

Pl. 29.

Old writers had the highest opinion of its invigorating powers. The seeds were recommended to be mixed with gum arabic and rose-water, and taken before meals by those who had little appetite, or a weak digestion. "Let old men and women," says one of the herbalists, "take much of this medicine, and they will either give me thanks, or show manifest ingratitude." Its outward application was to produce marvellous relief to various pains, to take off the blackness of bruises, to cure the tooth-ache, and even to "help the falling off of the hair."

The young plants of the Common Mustard are good for salad, and are often raised in gardens to be eaten with cress. The Germans call this plant *Senf*. It is the *Senepa* of the Italians; the *Mostaro* of the Spaniards; and the *Mosterd* of the Dutch.

The seeds of the Mustard are remarkable for the rapidity of their development—a quality well known to children, who watch with eagerness for the first seed-leaves which emerge from the soil so soon after they have sown the seeds in their little gardens; and it has been jocosely said, that a salad might be grown while a joint of meat was being roasted. Professor Burnett, remarking on the tenacity of life of these seeds, says that when a crop of Mustard has once been seeded, self-sown stragglers will come up for a century afterwards. Their rapidity of growth is greatly accelerated by certain conditions of the atmosphere. Mr. Pine, in a paper read to the Electrical Society, brings many cases to prove that luxuriance of vegetation is in proportion to the positive state of the air and the negative state of the soil. Thus, a drooping narcissus, being removed into a room, the atmosphere of which was continually surcharged with electricity from a machine often used for electrical purposes, revived, and attained the gigantic height of thirty-six inches. Mustard-seed, in a pot, the soil of which was negatively electrical, vegetated with greater vigour than when in a positive soil, and much greater than when the seed was in its ordinary condition.

The little mustard-seed has an interesting association, from having been more than once referred to by our Saviour; and 'small as a grain of mustard-seed' was probably a common comparison with the Jews. The plants of Scripture, like those of the classical writers, have been the objects of much careful investigation, and, doubtless, many have been identified by the researches of late years. We owe much to Dr. Royle in this matter; and in a paper read before the Royal Asiatic Society, in 1844, this botanist, after showing the unsuitability of various plants hitherto supposed to be the *Sinapi* of the New Testament, concluded that the true Mustard-tree is the *Khardal* of the Arabs. This word is, in the Arabic language, synonymous with our Mustard, and the tree thus named is abundant on the banks of the Jordan and the Sea of Tiberias, and is there used for the mustard of the table. It is the *Salvadora persica* of the botanist, and is a tree with numerous branches, among which the birds of the air may take shelter, while its seed is so small, as well to symbolize that little germ of faith to which our Saviour referred, in answer to that prayer so needful for us all, which came at that time from the lips of His disciples, "Lord, increase our faith!" and which He elsewhere compared to the grain sown in the ground, which increased to the great tree.

Irby and Mangles seem to have referred to this plant in their "Travels"; but Sir Joseph Hooker and Dr. Tristram differ from Dr. Royle on the ground that the Salvadora does not grow in the Holy-Land proper, though it is found in the Dead Sea basin. They contend that our *S. nigra* is the species referred to, for in Palestine it attains a height of ten feet, and may be fitly regarded as a tree among herbs, for flocks of linnets and other finches "lodge" among its branches for the sake of its abundant seeds.

4. **Wall-rocket** (*S. tenuifólia*).—Pods shortly beaked, erect; stems erect, leafy; leaves long and narrow, very acute, pinnatifid, or twice-pinnatifid, smooth. Plant perennial. In the south, south-west, and east of England, this is a common plant, with branched stems a foot or a foot and a half in height, and bearing, from June to September, a few pale yellow flowers. The different species of wild Mustard are sometimes difficult of determination by the young botanist, but this may be known at once from the others by its peculiar odour. The flowers have a scent which, though disagreeable to some, is liked by others. The author was accustomed, during childhood, to call the flower Yellow Custards, because of its somewhat almond-like fragrance, a fragrance still pleasing to her, as to many. Of the odour of the leaves, however, there would be but one opinion, for though while growing they seem almost scentless, yet, on being crushed, they emit the most nauseous and disgusting scent. This Rocket is often found in England, near houses, and on dry banks, or old walls, and heaps of rubbish about towns, and is very plentiful in the suburbs of London. It is rare in Scotland, but is found in Cheviotland. This plant is by some placed in the genus *Sisymbrium*, but with other writers, this, and the following species, are referred to the genus *Diplotáxis*.

5. **Sand-rocket** (*S. murális*).—Pods shortly beaked, erect; stem herbaceous, spreading, leafy only at the base; leaves smooth, and waved. This species is much like the last, but it has a simple stem, is much smaller, and is annual. It grows on sandy fields, near the sea, chiefly in the south and south-west of England. It is very abundant in cultivated lands in the Isle of Thanet, especially about Ramsgate. Dr. Withering observes of it,—"This weed, which has overrun the whole arable land of the Isle of Thanet, was first remarked, some twenty years ago, near to the beach at Broadstairs, and is believed to have been introduced on that spot by a corn-laden vessel, wrecked on that part of the coast."

28. Dame's Violet (*Hésperis*).

Common Dame's Violet (*H. matronális*).—Stem erect; leaves broadly lance-shaped, toothed; limb of the petals inversely egg-shaped; pods erect. Plant perennial. This is a handsome flower, often cultivated in gardens, and known, in old times, by the name of Rogue's Gillyflowers. It is occasionally found on hilly pastures in several parts of the kingdom, but has, doubtless, been the outcast of some neighbouring garden. It has pale purple flowers, fragrant in the evening, from May to July. The French call it *La Julienne;* it is the *Nachtviole* of the Germans. It was because of the custom of German ladies of placing these flowers in their rooms, that the

1. WILD RADISH
Raphanus raphanistrum.

2 SEA RADISH
Raphanus maritimus.

Pl. 30.

plant was called Dame's Gillyflower. Queen's Gillyflower was another of its old names. It was also termed Damask Violet.

29. RADISH (*Ráphanus*).

1. **Wild Radish** (*R. raphanístrum*).—Leaves lyrate, and stalked; pods jointed, 1-celled. Plant annual. This Wild Radish is often called Jointed Charlock, and has much of the general aspect of the wild mustard, though it is readily distinguished by its jointed pods, and pale straw-coloured flowers, veined with purple. These blossoms may be found throughout the summer, and are often white, but occasionally tinged with red. It is a rough plant, growing in corn-fields and by road-sides. Its roots have the odour of those of the Garden Radish, but are more pungent; and they are said to be preferable to horse-radish for the table, but when quite young are milder. The leaves were formerly much valued as a pot-herb. This Radish grows in cultivated lands throughout Europe, and in wet seasons a great quantity of the plant is found in the barley-fields of Sweden. Its seeds become mingled with the grain, and when ground with the corn and made into barley-bread, they were supposed by Linnæus to be the cause of a violent and dangerous spasmodic disease, called Raphania, which is an occasional epidemic of Sweden. The plant, however, abounds in our English fields, and in some of the cold moist valleys of Dauphiny is one of the most frequent weeds, yet in neither country is this disease experienced. Professor Burnett thinks that the injurious effect of the plant in some circumstances may be owing to a morbid condition of the seeds, or to the growth of noxious fungi upon them, rather than to anything unwholesome in the seeds themselves; and this would account for the fact that Raphania is an occasional, and not an annual disease; but many writers think that the malady is altogether unconnected with the plant.

The Garden Radish, that common salad root, is the *Raphanus sativus*. It has several varieties, as the Turnip, Spanish, and other well-known Radishes. The Tree-Radish, *Raphanus caudatus*, is remarkable for the length of its pod, which is greater than the whole height of the plant. The young leaves of most of the species are eaten as salads in the lands in which they grow. The Radish is called *Radis* by the French, *Der Rettig* by the Germans; it is the *Tamme Radys* of the Dutch, and the *Rafano* of the Italians.

2. **Sea Radish** (*R. marítimus*).—Leaves interruptedly lyrate; pod jointed, marked with lines, and larger than the preceding. Plant biennial. This plant, which grows on sea-cliffs, and bears its yellow flowers in June, is very similar to the last species. It is by many writers regarded as a variety only, its chief points of difference being its larger pods, and the form of its leaves, which are composed of small and large leaflets, arranged alternately. It has been found on many parts of the coast, especially on the South and West.

Order VII. RESEDACEÆ—ROCKET TRIBE.

Calyx often irregular, divided into from 4 to 7 segments; petals unequal, jagged at the back; stamens, as well as the petals, inserted on an irregular

disk, on one side of the flower; stigmas 3, sessile; ovary 3-lobed, 1-celled, many seeded, open at the summit; seeds kidney-shaped; plants herbaceous, more rarely somewhat shrubby, their flowers being arranged in clusters or spikes, and their leaves alternate. The properties of all are innocuous, and, with the exception of the Dyer's Weed, they are little used for any economical purposes.

ROCKET (*Reséda*). — Calyx of one piece, many-parted; petals entire, or variously cut, unequal; stamens numerous; capsule 1-celled, opening at the summit. Name from *réséd*o, "to calm," from the supposed sedative effect of some of the plants.

ROCKET, MIGNONETTE (*Reséda*).

1. **Dyer's Rocket, Yellow Weed, or Weld** (*R. lutéola*).—Leaves long, narrow and undivided; calyx 4-parted; stigmas 3. Plant biennial. On chalky inland or sea-side cliffs, or by the road-side or field-borders, this tall, slender species often attracts the eye of the wanderer over the chalky or limestone soil. It is an erect, herbaceous plant, from two to three feet high; its pale yellow, greenish flowers, blossoming in July, having very conspicuous stamens, and being succeeded by short flattened capsules. It was, in former times, much used by dyers, and cotton, silk, linen, and woollen materials receive a beautiful tint from its juices; while blue cloths dipped in the dye assume a rich green colour. Every portion of the plant is used by the dyer, and to the juices of this yellow weed the artist owes the colour called Dutch pink. This plant is remarkable as being one of the first which appear on the rubbish thrown from coal-pits. Linnæus observes of it, that it follows the course of the sun even when obscured by clouds, pointing throughout the day in its direction, turning to the east at the dawn of morning, looking southwards at noonday, saluting the west at sunset, and at midnight standing due north.

2. **Wild Mignonette** (*R. lútea*).—Leaves 3-cleft, lower ones pinnatifid; calyx 6-parted; petals 6, very unequal. Plant biennial. This is so much like the Garden Mignonette, the Little Darling of the French, "The Frenchman's Weed," as Cowper calls it, that it would at once be known as a Mignonette by any who are familiar with the scented flower. Its spikes of blossoms, however, have not the pretty reddish tinted stamens of that species, being altogether of a yellowish-green hue. The odour of the Wild Mignonette, too, is rather unpleasing than agreeable, though it is not powerful. Calder Campbell, in a little poem which he has written for this volume, alludes to this circumstance.

"The flowers we gather in the sun may soothe us in the shade,
As thoughts amid the crowd that spring our lonely hours pervade;
Consoling us for pleasures past by whispering of those
That yet shall crown our honest toils with justly-earn'd repose.

"A book may hold a rose's leaf, preserved for many years,
Whose scents and hues can conjure up sad smiles that turn to tears:
Affection dormant, if not dead, may wake again restored,
By finding faded nosegays in some old neglected hoard.

"When I remember blossoms cull'd in early days of yore,
I seem to smell their fragrance, though I see their blooms no more;
A mem'ry thus oft makes the false, reality assume,
As thoughts of violets with their scents may fill my quiet room.

1 DYERS ROCKET YELLOW WEED
Reseda luteola

2 WILD MIGNONETTE
Reseda lutea

3 SHRUBBY ROCKET
Reseda fruticulosa

Pl. 31.

"Thus wandering o'er the cliffs one day, a wayside plant I saw,
Which from my unaccustomed lips did joyful welcome draw;
A gush of perfume, at the sight, around me breathed,—but when
I sprang and pluck'd the flowers, ah me! where was the fragrance then?

"'It is the Mignonette,' quoth I; 'yet odour there is none!'
Abundant o'er the chalky hills its blossoms met the sun;
A deeper yellow on them lay than clad my garden flowers,
And yet there was no soothing scent, the semblance only ours.

"Oh false, but fair, Wild Mignonette! thou art the type of all
Who promise fairly to the eye, but answer not the call
Of such as seek to soothe the sense with sweetness rich and clear,
As wind harps, wanting air, deny all sweetness to the ear."

Our Wild Mignonette is a common flower during June, July, and August, especially on chalky hilly lands. It is more bushy than the Dyer's Weed, and its spikes are shorter, thicker, and of a yellower tint; while its oblong wrinkled capsules are much more like those of the Fragrant Mignonette. This latter species is a native of Egypt, and is one of the most valued, though one of the most common, of our garden flowers; its sweet odour often greeting us from the city, when the box is placed in the balcony, or when its clusters flourish on some little inclosure. To many a one who passes with hurried footstep, intent on the business of the day, it brings a sweet remembrance of country scenes and summer odours; and its fragrance is borne in by the breeze, perchance, to some who lie on the sick-couch, and tells of gardens far away, and sweet spots of sunshine and flowers.

It is not a century and a half since this well-known plant was introduced into this country, but, like the fuchsia, it so easily accommodated itself to our soil and climate, and became so general a favourite, that no garden is now without it. The famous Tree Mignonette is merely this species rendered shrubby, by preventing the early development of the blossoms. In France, where the plant has been much treated in this way, instances have occurred in which the woody stems have attained an inch in circumference.

3. **Shrubby Rocket** (*R. fruticulósa*).—Leaves all pinnate, waved, glaucous; calyx 5-parted; petals 5, 3-cleft, nearly equal. Plant biennial or perennial. This plant is not truly wild, but is occasionally found in waste places in Cornwall, Somersetshire, and other counties, and is planted in gardens. It flowers in June, and may be distinguished by its sea-green tint, and its 5-cleft flowers.

Order VIII. CISTINEÆ—ROCK-ROSE TRIBE.

Sepals 5, the three inner ones twisted spirally while in bud; petals 5, twisted when in bud, in a direction contrary to the sepals, soon falling off; stamens numerous; ovary single, 1 or many-celled; style and stigma simple; capsule 3, 5, or rarely 10-valved. The plants of this order are chiefly shrubby, but sometimes herbaceous, with undivided leaves, and yellow, red, purple, or white flowers, which are peculiarly ephemeral in their nature. Many of the species are exceedingly ornamental to gardens, for though falling off after one day's bloom, yet the buds are so thickly crowded on the shrubs, that on the next day the boughs are again covered with a magnificent display of expanded flowers. Several of the herbaceous species are also planted in

clumps on the garden beds. On the rocks of Greece, as well as those of Palestine, the Cistus shrubs are very abundant, and all the genera abound most on dry and elevated spots, some of them being natives of almost all the countries of the world. The balsam called Ladanum, which is so much used as a perfume in Greece and in Oriental countries, and which is prized for its tonic and stomachic properties, is produced by the *Cistus creticus*. Southey has described the fragrance of the Cistus plants:

> "The forest or the lonely heath wide spread,
> Where Cistus shrubs sole seen, exhaled at noon
> Their fine balsamic odour all around,
> Strew'd with their blossoms, frail as beautiful,
> The thirsty soil at eve; and when the sun
> Relumed the gladden'd earth, opening anew
> Their stores exuberant, prodigal as frail,
> Whiten'd again the wilderness."

1. ROCK-ROSE (*Heliánthemum*).—Sepals 5, the two outer either smaller or wanting; petals 5; stamens numerous; capsule 3-valved. Named from the Greek *helios*, the sun, and *anthos*, a flower, because the flowers expand in the sunshine.

1. ROCK-ROSE (*Heliánthemum*).

1. **Common Rock-rose** (*H. vulgáre*).—Stem shrubby, prostrate; leaves with fringed stipules, opposite, oblong, green above, hoary beneath; calyx of five leaves, the two outer very small and fringed; seeds black. Plant perennial. Anyone used to roam over the chalky or gravelly soils of this country must have often seen, early in spring and late in autumn, the prostrate branches of this Rock-rose, covered with their leaves. In spring these are of a tender verdant tint; but late in the year they are rigid, of a dark myrtle-colour, and shine with the deepest green hue on the reddened leaf-stems. When the sunshine of July pours down on the grassy slopes, and tinges their sides with its gleams, the clumps of brilliant yellow flowers are bright, as if the sun had turned them into gold. They are truly, as the ancients called them, Beauties of the Sun, or, as some country people term them, Sun-Roses; never opening save when skies are bright, and never lingering on till the late autumnal season. Their petals are crumpled and fragile, and the little unblown buds are very pretty, standing by thousands as they do among the grass on a cloudy day, waiting for the morrow's sun. The stamens are very sensitive, and if only touched by the wing of an insect or the point of a needle, they all lie down on the petals. It is long before they resume their erect position, and in some cases they appear not to do so at all. The bees seem very fond of these flowers, flying from one clump to another, with their deep joyous humming, passing by their favourite wild thyme, to rob the Cistus flower, which first invited them; for these sagacious insects keep throughout the morning to the same kind of blossom as that from which they first gathered the honey, and never mingle the sweets of the thyme and the Cistus.

Many writers on the flowers of Scripture consider that a variety of this Rock-rose is the plant alluded to in the Canticles, as the Rose of Sharon. It does not appear that the Hebrew word, *Chabazzeleth*, which our translators have rendered by "rose," is ever applied to that flower; and as the plains of

COMMON ROCK-ROSE.
Helianthemum vulgare.

HOARY ROCK ROSE.
H. canum

SPOTTED ROCK-ROSE.
H. guttatum

4 WHITE ROCK ROSE.
H. polifolium

5 DOTTED LEAVED ROCK ROSE.
H. surrejanum

6 LYDIUM LEAVED ROCK ROSE.
H. lediifolium

Pl. 32.

Sharon are full of the red variety of the Cistus, it is reasonable to suppose that this may be intended. The subject has been well investigated by learned and judicious botanists; but whether this pretty Cistus, the asphodel, the true rose, or the narcissus, is the flower alluded to, cannot be fully ascertained.

2. **Hoary Dwarf Rock-rose** (*H. cánum*).—Shrubby, without stipules; leaves opposite, egg-shaped or oblong, hoary beneath; racemes of flowers terminal. Plant perennial. This very rare plant occurs on limestone rocks in the north of England, in Wales, and in the west of Ireland. Its flowers are small and yellow, appearing from May till July. The leaves are quite grey with down.

3. **Spotted Annual Rock-rose** (*H. guttátum*).—Stems erect; leaves long and narrow, the lower ones opposite and without stipules, the upper ones alternate. This is one of the rarest of our wild plants, and the typical form is known to occur only in the south and west of Ireland, and at Jersey and Alderney in the Channel Islands. A sub-species (*H. breweri*) occurs only at Anglesea and Holyhead. It flowers from June to September. It is a common species in France, Italy, Portugal, and Turkey. Its flowers are yellow, with a deep-red spot at the base of the petals.

4. **Ledum-leaved Rock-rose** (*H. ledifólium*). — Stem herbaceous, slightly downy, with stipules; leaves lance-shaped; flower-stalks solitary, opposite to the leaves; capsule smooth and shining. Plant perennial. This Cistus was reported by Hudson, as growing on Brean Downs, in Somersetshire, but the record has never been confirmed.

5. **White Rock-rose** (*H. polifólium*).—Shrubby, procumbent, stipuled, hoary; leaves oblong, more or less rolled under at the margin; racemes solitary, terminal. Plant perennial. This white-flowered Cistus is very rare, and is confined to stony places in the south of England, as at Torquay, Babbicombe, and other places in South Devon; also on Brean Down, in Somersetshire, where it is very abundant. Many a botanist of these neighbourhoods goes forth to seek its blossoms in June and July, reminding one of Wordsworth's words:—

> "Happy in my judgment,
> The wandering herbalist, who, clear alike
> From vain, and that worse evil, vexing thoughts,
> Casts on these uncouth forms a slight regard
> Of transitory interest, and peeps round
> For some rare flow'ret of the hills, or plant
> Of craggy fountain; what he hopes for, wins,
> Or learns, at least, that 'tis not to be won:
> Then, keen and eager as a fine-nosed hound,
> By soul-engrossing instinct driven along
> Through wood or open field, the harmless man
> Departs intent upon his onward quest!
> No flow'ret blooms
> Throughout the lofty range of these rough hills,
> Or in the woods, that could from him conceal
> Its birth-place!"

Order IX. VIOLACEÆ—VIOLET TRIBE.

Sepals 5; petals 5, sometimes unequal; stamens 5; anthers lengthened into a flat membrane; style with an oblique hooded stigma; ovary 1-celled; seeds numerous, in three rows. This order, which consists chiefly of the Violet genus, contains many favourite flowers of the gardener. The greater number of the tribe are hardy herbaceous plants, some remarkable for their fragrance, others for their beautiful colours; but few are shrubs. They are found in most parts of the world, often occupying very elevated situations; but they are entirely absent from the countries of Tropical Asia. The plants of this order which occur in temperate regions are generally herbaceous, but in South America the species are mostly shrubs. Their medicinal properties are found chiefly in the roots, which appear in all the Violets to possess emetic properties in a greater or less degree. One of the Ipecacuanhas, so valuable as a medicine, is the root of a Brazilian violet; and several of the shrubby *Violaceæ* of Brazil are plants of great interest.

VIOLET (*Viola*).—Sepals 5, extended at the base; petals 5, unequal, the lower one lengthened into a hollow spur beneath; anthers united into a tube, the two lower ones furnished with spurs, which are inclosed within the spur of the corolla; capsule with three valves. *Viola* was the Latin name of some fragrant flower called *Ion* by the Greeks.

VIOLET (*Viola*).

* *Leaves and flowers all springing directly from the root.*

1. **Hairy Violet** (*V. hirta*).—Leaves heart-shaped, hairy, as are also the leaf-stalks and capsules; bracts below the middle of the flower-stalks; sepals obtuse; lateral petals usually with a hairy central line. Plant perennial. This Violet, more than any other species, resembles that favourite flower, the sweet-scented Wood-Violet; but its blue tint is darker, and usually it has not creeping shoots. The rough hairs which beset the leaf-stalks and leaves, and the total want of the sweet scent of that Violet, are also obvious distinctions. It blossoms in April, and is occasionally pale blue or white. It is not unfrequent in English woods and pastures, preferring a chalky or limestone soil, and thriving especially near the sea; but it is a rare plant in Scotland, although found in Dumfriesshire, and in the eastern parts of the country. The flowers of this, as well as of some other species, are often destitute of petals.

2. **Sweet Violet** (*V. odorata*).—Leaves heart-shaped, slightly downy, especially beneath; bracts about the middle of the flower-stalks; sepals obtuse; lateral petals with a hairy central line; scions creeping. Spring Violets! What lover of the country is not gladdened by their coming, and is not willing to search again for their buds among the dark-green leaves, as he did in his childhood? What wonder that poets have made them symbolic of beauty and virtue, from the old Arab bards and the Provençals of later years, and the Eastern minstrel who sings of the violet-tinted eyelid, to him who in our days compares the eye to the Violet dropping dew, or the secluded maiden to the

"Violet by the mossy stone, half hidden from the eye!"

1. HAIRY VIOLET.
   Viola hirta.
2. SWEET VIOLET.
   V. odorata.
3. MARSH VIOLET.
   V. palustris.
4. DOG VIOLET.
   V. sylvatica.
5. DWARF YELLOW-SPURRED VIOLET.
   V. pumila.
6. CREAM COLOURED VIOLET.
   V. lactea.
7. PANSY, OR HEARTSEASE.
   V. tricolor.
8. MOUNTAIN PANSY.
   V. lutea.

Pl. 33.

The south wind that came over the bed of Violets—the touching remark of Ophelia, who coloured all nature with the hues of her own sad thoughts, "I would give you Violets, but they withered all when my father died:" these and many another sweet poetic passage, serve to show how men in all ages have prized our spring flower. Which of us could spare the Violet from the memories of early life? And how many of us are even now reminded by its passing scent of scenes which may never be revisited, but whose verdure and sunshine and song make a picture on which the eye of the mind can linger as long as life itself shall last. The Violet is so associated with green meadows speckled over with lambs, and woods made musical with voices of singing birds and softly breathing winds, that many a lover of Nature can respond to the expression of Willis:—

"I have found Violets, April hath come on;
And the cool winds feel softer, and the rain
Falls in the beaded drops of summer-time.
You may hear birds at morning and at even;
The tame dove lingers till the twilight falls,
Cooing upon the eaves, and drawing in
His beautiful bright neck; and from the hills
A murmur, like the roaring of the sea,
Tells the release of waters; and the earth
Sends up a pleasant smell, and the dry leaves
Are lifted by the grass,—and so I know
That Nature with her delicate ear hath heard
The dropping of the velvet foot of Spring.
Smell of my Violets! I found them where
The liquid south stole o'er them, on a bank
That lean'd to running water. There's to me
A daintiness about these early flowers
That touches me like poetry; they blow
With such a simple loveliness among
The common herbs of pasture, and breathe out
Their lives so unobtrusively, like hearts
Whose beatings are too gentle for this world.

'I love to go in the capricious days
Of April, and hunt Violets; when the rain
Is in their blue cups trembling, and they nod
So gracefully to the kisses of the wind.
It may be deem'd unmanly, but the wise
Read Nature like the manuscript of heaven,
And call the flowers its poetry."

The Sweet Violet is rare in Scotland, and is thought by some botanists not to be truly indigenous to that country. It occurs, however, in most of the countries of Europe. The Violets of Athens and of Pæstum have had their praises sung by poets, and these flowers still attract the eye of the traveller among the ruins of Rome. The mechanism of the Violet flower is well worthy of special attention. The tube formed around the pistil by the edges of the anthers coming into close contact, and the extension forwards of the *connective*, provides a chamber in which the dry pollen is retained after being discharged from the anthers. The spurs from the lower stamens have become honey-excreting organs, and these lie in the hollow spur formed by a backward extension of the lower petal. The bent style with its enlarged head (*stigma*) occupies the centre of the flower, and a long-tongued bee reaching after the honey presses his hairy head against the stigma. In getting at

the honey, his tongue pushes the anther spurs aside, and this has the effect of opening the pollen-chamber and letting a little shower of the dry grains fall upon his face. On visiting another Violet, this pollen will be at once deposited upon the stigma, and so effect cross-fertilization of its seeds. A few carefully-gathered Violets and a bristle or fine grass-stem will enable the reader to fully appreciate the beauty of this arrangement. Yet for some reason, not definitely known, these flowers produce but few seeds. Later in the season there appear the imperfect, never-opening (*cleistogamous*) flowers alluded to under *V. hirta*, which give origin to well-filled seed capsules.

In all Eastern countries the Violet is a favourite flower, and a sherbet flavoured with its blossoms is a common drink at the Persian and Arabian banquets. The flower is sold in the modern markets there, as it is in those of Paris or London, and as it was in those of Athens in former years, when people were employed to arrange bouquets for gifts, so as to be expressive of the sentiments of the donor.

In olden times this species was called the March Violet, and it is still the *Marzveilchen* of the Germans, and the *Violette de Mars* of the French. Gerarde also calls it Black Violet, perhaps because of its purple hue, or possibly because Theophrastus having described the Violet as black, our herbalists thus distinguished the species which they supposed to be intended by the ancient writers. "They have," he says, "a great prerogative above the other Violets, not only because the minde conceiveth a certaine pleasure and recreation by smelling and handling these most odoriferous flowers, but also for that very many by these Violets receive ornaments and comely grace; for there be made of them garlands for the head, nosegaies, and posies, which are delightful to look upon, and pleasant to smell to, speaking nothing of their appropriate virtues; yea, gardens themselves receive by these the greatest ornament of all cheerful beautie and most gallant grace. And the recreation of the minde which is taken thereby cannot but be very good and honest, for they admonish and stir up a man to do that which is comely and honest; for flowers, through their beautie, variety of colour, and exquisite forme, doe bring to a liberal and gentlemanly minde the remembrance of honestie, comelinesse, and all kindes of virtues. For it would be an unseemelie thing for him that doth look upon and handle faire and beautiful things, and who frequenteth and is conversant in faire and beautiful things, to have his minde not faire but filthie and deformed." The old herbalist was right; the love of flowers has a refining and elevating influence, and the flower has so much to tell the listening heart of God's care and goodness in creation, that he is indeed slow to learn the highest lessons, who shall gain no thought of their Maker while looking at them, and whose heart shall never utter the sentiment of Linnæus, "Blessed be God for the green earth!"

Pliny, and our old herbalists, had much to relate of the properties of the Violets. The Roman naturalist said that their odour cured the headache, and that great healing virtues existed both in leaf and flower. In modern practice a syrup of Sweet Violets is occasionally given to children, and the tincture of the flowers is a useful chemical test, uncombined acids changing the blue to red, and alkalies to green. By some botanists the flowers are considered anodyne in properties. Professor Lindley says, "They certainly

induce faintness and giddiness in particular constitutions, as I have witnessed. Triller mentions a case in which they produced apoplexy." But peculiar effects are produced by the odour of other flowers besides Violets, the rose even not excepted.

The Violet has ever been prized as an old English flower; and we find the "cool Violet," as Spenser calls it, named in the list of those which were present in all the old floral usages. Thus, in Dr. Roger Hacket's celebrated sermon, entitled "A Marriage Present," the author introduces as flowers fitted to be used at weddings, Violets, and the roses called Maiden's Blushes, though the rosemary was praised beyond them all, as "medicinable for the head, and well affecting the heart," an opinion which poets of the day fully declared to be general. From Googe's translation of that old work, "The Popish Kingdome," we find that the Violet was among the flowers used in the old ceremony called "Creeping to the Crosse," when, on Good Friday, priests, clad in crimson, and "singing dolefully," carried the image of the cross, accompanied by another image, representing a person just dead.

"With tapers all the people come,
and at the barriars stay,
Where downe upon their knees they fall,
and night and day they pray;
And Violets, and every kind
of flowres about the grave
They straw, and bring in all their giftes
and presents that they have."

The Abbot Neckam gives us his idea of a "noble garden," which he says should be arranged with roses, lilies, sunflowers, Violets, and poppies; he mentions also the narcissus. Mr. Macaulay, in his paper on the "Flower Gardens of the Ancients," remarks:—"The Athenians always had flower-gardens attached to their country houses. One of those which Anacharsis visited he thus describes: 'After having crossed a court-yard full of fowls and other domestic birds, we visited the stables, sheep-folds, and likewise the flower-gardens, in which we successively saw bloom narcissuses, hyacinths, irises, Violets of different colours, roses of various species, and all kinds of different plants.'" The Violet was, in early times, in our country, regarded as an emblem of constancy. Thus an old poem says—

"Violet is for faithfulnesse,
Which in me shall abide;
Hoping, likewise, that from your heart
You will not let it slide."

The Troubadours classed it with the wallflower, as an emblem of this virtue. Their prize of a golden Violet, awarded to the best versifier, proves, too, how much the flower was esteemed by them.

This Violet, though usually of very dark blue, is sometimes found of pale lilac hue. White Sweet Violets are very common; and the Rev. W. T. Bree found this flower of a red colour at Castle-hill, Allesley, and on the mount of Warwick Castle. Botanists have also found the red Violet in other countries. We used in childhood to think the white blossoms more fragrant than the blue ones, and they probably are so. Mr. Knapp, in his "Journal of a Naturalist," mentions a pretty practice of country children with these

flowers. "We have," he says, "our daisies strung and wreathed about our dress, our coronals of orchises and primroses, and our cowslip balls; and one application of flowers at this season I have noticed, which though, perhaps, it is local, has a remarkably pretty effect, forming, for the time, one of the gayest little shrubs that can be seen. A small branch or long spray of the whitethorn, with all its spines uninjured, is selected, and on these its alternate thorns, a white and a blue Violet, plucked from their stalks, are stuck upright in succession, until the thorns are covered; and when placed in a flowerpot full of moss, has perfectly the appearance of a beautiful vernal-flowering dwarf shrub, and as long as it remains fresh is an object of surprise and delight."

3. **Marsh Violet** (*V. palústris*).—Leaves heart-shaped, or kidney-shaped, quite smooth; sepals obtuse; spur very short; root creeping; scions short. Plant perennial. This little flower is like the other Violets in form, but it is much paler in colour than most of the species, being of a light grey lilac tint, marked with darker veins. It is in flower from April to June, among the large mosses of the bogs, or sometimes, as in the neighbourhood of Clifton, in shady moist lanes. Its stalks are short, and its leaves of pale green, often tinted with purple on the under side. It is less frequent in the south than the north of England, but is very abundant in Scotland, where it sometimes grows even at a considerable elevation. It is usually described as scentless, but, in some instances, it has the odour of the Sweet Violet, though not quite so powerful.

* * *Furnished with an evident stem.*

4. **Wood Violet** (*V. sylvatica*).—Root-stock short; leaves heart-shaped, and pointed, forming a rosette; sepals acute; stipules long, toothed, and fringed; bracts awl-shaped, entire. Plant perennial. The flower, unlike that of the scented Violet, is not hidden among the leaves, but stands up on longer stalks, where it may be easily seen. It is usually more abundant than the Sweet Violet, in woods, hedges, and the borders of pastures, and it remains longer in bloom than most of the species, coming with the Sweet Violet, in April, and continuing till July. It is the largest of our native Violets, and, notwithstanding that it is scentless, it is very lovely in its pale blue lilac tint, sometimes in its profusion giving its own peculiar colour to some sunny bank. We have gathered these Violets from the woods of Kent, with the flower twice the size of the scented species, standing on a stalk seven inches high, though the common height is about five inches; and we have thought that it merited some better name than that of Dog Violet, given to it as well as to *V. canina*, in a contemptuous spirit, doubtless, because it lacked perfume. The leaves are small and thin, pale green, on long stalks. The flower is easily known from the fragrant species by its look of airiness and grace, and when growing high up in the clefts of rocks, as it sometimes does, it is very attractive. It had an old repute as a medicine in cutaneous disorders, and modern practitioners consider this as not wholly unmerited. In common with all the species of Violet, it has the power of throwing its seeds to a distance; and anyone who in early summer will gather these capsules and place them in the sunshine, may see the mode in which the dispersion of the

1 PEACH-LEAVED VIOLET.
(Viola persicæfolia.)

2 DOG VIOLET.
(Viola canina.)

3 SAND VIOLET.
(Viola arenaria.)

seed is effected. The capsule consists of one cell, which is full of seeds, and which is formed of three valves. The seeds are attached to the inner part of each of these valves, and the parchment-like covering bursts open as it ripens into three divisions, exposing to view the closely-arranged glossy seeds on each valve. Each valve begins to fold along the centre and bring the two halves together, thus exerting a gradually increasing pressure upon the polished oval seeds from below, and at length suddenly detaches them, and they are jerked off to a considerable distance. The capsule of the Violet, after ripening, stands upright on the stalk. "This upright position," says a writer in the "Magazine of Natural History," speaking of it as occurring in the scented Violet, "appears to be intended by Nature to give more effect to the valvular mechanism for scattering the seeds, as it thus gains a higher elevation, in some cases more than an inch, from which to project them; and this will give it, according to the laws of projectiles, a very considerable increase of horizontal extent." A smaller variety of the Wood Violet is sometimes called *Viola reichenbachiana;* it has paler flowers, with longer spurs.

5. **Cream-coloured Violet** (*V. láctea*).—Stem divided into procumbent or sub-erect flowering branches; leaves egg-shaped, scarcely heart-shaped at the base; petals narrow. Plant perennial. This Violet grows on mountains, and is not unfrequent on boggy heaths in England. It has also been found, though rarely, in Scotland and Ireland. Its flowers appear in May, and are pale blue or white. It is by many botanists considered to be but a sub-species of the Dog Violet.

6. **Dog Violet** (*V. canina.*)—This is probably a form or sub-species of *V. sylvatica,* but when that has its leaf-rosette well developed, it appears very distinct. In *V. canina* the leaves are on long footstalks, and the bracts are halfway up the flower-stalk, or a little above it, slender and toothed. It appears about a month later than the Wood Violet, and is found more on grassy banks than in woods.

7. **Peach-leaved Violet** (*V. persicæfolia*).—Though regarded by some authors as a distinct species, others regard this as a sub-species of *V. canina,* from which it is distinguished by its long root-stock and its runners. Its flowers, too, are always paler, being either a delicate lilac tint or white. It is very local, and has been recorded as occurring in boggy places in the eastern counties; also in Galway, Ireland.

8. **Sand Violet** (*V. arenaria*).—A small tufted plant, covered with hoary down, and with rounder leaves than those of *V. canina.* The flowers are pale blue, with broad petals and short spur, borne on short branches from the compact little rosette of leaves. They appear in May and June. It is one of the rarest of our native plants, only two localities being recorded. One of these is in Westmoreland, and the other in Upper Teesdale, at an altitude of 2,000 feet.

9. **Pansy Violet,** or **Heartsease** (*V. tricolor*).—Stem angular, branched; leaves oblong, crenate; stipules deeply cut; terminal lobe broad, crenate. Plant generally annual. This, and the following species, are the only representatives in our fields of the Pansy, that beautiful velvet-like flower which has so many varieties in the garden. Most of our garden

Pansies, as well as many of the cultivated Violets, have been brought from the south of Europe, though several come from colder countries, and, in many cases, are so altered by the management of the gardener, as to be very different from their condition when wild. Few flowers have received more attention from florists, or more praises from the old poets, than the Pansy, which is called by the latter *Pensée, Pauncé*, or Pansie, as well as by its old familiar names, still used in country places, of Kit-run-the-street, and Heartsease. That it was an acknowledged symbol of remembrance we know from Shakspere, Spenser, and the poets of those days ; and Chapman, too, who wrote in 1605, says,—

"What flowers are these ?
The Pansie this ;
Oh ! that's for lovers' thoughts."

But our field Pansy the poets have not regarded, and it is little noticed save by botanists and country children, and by the farmer, who calls it a troublesome weed. It grows on a stem about half a foot high, and bears its flowers throughout the summer. These are usually of a pale yellowish hue, or cream colour, but they are sometimes veined, or more or less tinged, with purple, and the calyx of the buds is usually purplish.

10. **Yellow Mountain-violet, or Heartsease** (*V. lútea*).—Stem angular, branched chiefly at the base; leaves oblong, crenate; stipules deeply cut; terminal lobe narrow, entire. Plant perennial. This Pansy, which flowers in June, on mountainous pastures, is much like the last; but its flowers, which are variable in size, are usually much larger. Though it is distinguished as the Yellow Violet, the petals are often of a deep purple. It is by some regarded as a sub-species of *V. tricolor*, from which it may be distinguished by its *underground* runners.

Order X. DROSERACEÆ—SUNDEW TRIBE.

Sepals and petals, 4, 6, or 8; stamens distinct, either equal in number to the petals, or 2, 3, or 4 times as many; ovary single; styles 1—5, often 2-cleft or branched; capsule of 1—5 cells and 2—5 valves, which bear the seeds at the middle or at the base. This is a small Order. The plants composing it are, in one or two instances, shrubby, but the British species are all herbaceous. The leaves are alternate, and, when young, are rolled up in the same manner as the young fronds of ferns. These plants are natives of bogs, marshes, and inundated lands, in all the temperate regions of the world, and are remarkable for the abundance of glandular hairs which cover all parts of the foliage. They possess an acrid principle, but their medical properties are not of much power.

SUNDEW (*Drósera*).—Sepals, petals, and stamens 4, 6, or 8; styles 2—5, deeply cleft; capsule 1-celled, 2—5-valved. Name from the Greek *droseros*, dewy, the leaves being covered with drops which, during sunshine, look like dew.

SUNDEW (*Drósera*).

1. **Round-leaved Sundew** (*D. rotundifólia*) —Leaves all from the root, spreading around in a horizontal direction; leaf-stalks hairy; seeds chaffy.

Plant perennial. There is not one of our wild flowers which has, during the last century, excited so much curiosity as our Sundew. This is the most frequent of the three species, and though we can hardly call it a common plant, yet it is abundant on many of our peaty bogs and heaths, as on those of Reigate in Surrey, Stoke Common near Slough, and Sandown in the Isle of Wight. Its flat leaves are on stalks, and roundish in form, tinged more or less with crimson, and surrounded with bristle-like hairs, and they lie in rosettes around its root, shining among the pale green bog-mosses. The leafless stalks bear in July small white starry flowers. Yet few of these flowers expand, and one may look upon the nodding buds summer after summer, and think that the flower never expands at all, yet wonder to see how, without their expansion, the seed-vessels grow and ripen their seeds, and the patches of leaves grow larger and larger, and more of them are to be seen each successive summer. Gerarde and the older herbalists always in their illustrations of the plant represented it in its drooping unfolded condition. In the case of the author, long summers of patient watching were not rewarded by the loveliness of the full flower, and never has it been her lot, after years of acquaintance with it, to see it in all its glory, when masses of Sundew were, as described by a friend, "looking like crowds of pearls scattered over a fairy carpet of rubies." Linnæus had said that the blossom opened at ten in the morning and closed at mid-day. Yet no early rising, nor even the going forth with the dawn, will ensure the certainty of finding it in its perfect state; nor can botanists explain this shyness and uncertainty of bloom. Even as lately as five-and-twenty years since, several well-known botanists wrote to the editors of magazines of natural history, inquiring if anyone had really seen the fully blown flower; and one careful observer replied by remarking that having transferred from the bog some plants of *Drosera rotundifolia* to some pots in his garden, he had at length, on one July day, seen, at half-past ten o'clock in the morning, the little white star of the flower. He added that this closed at one o'clock, as did also four other flowers which opened on the following day. On the other hand, several correspondents stated that although this Sundew opened at those hours only, yet even in the brightest sunshine it often continued closed at the time at which it was expected to unfold.

The same remarks may be made of the other two less common of our native species, which are sometimes found growing near the round-leaved plant.

Bishop How informs the author that he found them all three on Whitall Moss, near Ellesmere, where he saw besides the rare shrub Andromeda (*A. polifolia*) in great abundance; while on the neighbouring moss of Welsh Hampton the still rarer little marsh scheuchzeria (*S. palustris*) grew in some quantity.

But if the flower has its mysteries, those of its leaves are the special point of the Sundew. These, which when young look like little green hoods, are now ascertained to form a number of complex vegetable traps, when they afterwards unfold into concave disks. The leaves are generally broader than long, and are covered with hairs, each of which bears a gland at the top. These hairs are called tentacles by Darwin, because of their power of

action, and he has found that the average number on each leaf is above 190, while some have as many as 260. Those in the centre are short and stand upright, and their stalks are purplish-green, and somewhat flattened. These leaves shine as if they retained the early dewdrops, for their hairs are surrounded by conspicuous drops of a clammy substance, which exude from the glands, and which, glittering in the sunshine, gained for the plant its name of Sundew—a name which finds its synonym in almost every country in Europe. The flower was of old times called also Rossolis, as well as Red Rot. The plant, which turns black when drying, stains paper on which it is placed with a deep red hue.

This juice of the Sundew, which may be drawn out in viscid threads, has long been known to be acrid and caustic—enough so, indeed, to blister the skin—and it is used by country people as a cure for corns and warts, though when diluted with milk it makes one of the best of vegetable cosmetics. It also curdles milk by its powerful acid properties, and the plant is said to cause some maladies to sheep if feeding on it. But the pastures on which it abounds would, from their moist nature, be unfavourable to the health of these animals, though the herb itself may probably merit the disfavour of the shepherd, as Professor Lindley mentions a Brazilian species which is considered poisonous to cattle. The once-famed *aqua rosæ solis*, called also spirit of sundew, was highly praised by old writers as a cure for convulsions, and even the plague; and the juice distilled with wine, and spiced, was formerly much used as a tincture.

"Beyond, the moorland has its wealth
Of pink and purple, blue and gold;
Heather and gorse, whose breath gives health,
And ling, a hive of bees that hold:—
And when there's moisture in the brake,
The clammy Sundew's glistening glands
'Mid carmine foliage boldly make
Slaves of invading insect bands."

Everyone who has observed the Sundew must have seen how its leaves are disfigured by the blackened remains of dead insects, or the torn gauzy wings of little creatures yet struggling to escape, lessening for a time their beauty, but being really necessary to the very existence of the plant. When some insect, allured by the sweet drops, alights on a leaf, it is seen that this has a wonderful power of motion, reminding one of that of the tentacles of the sea-anemone. No sooner do those delicate feet touch one or two of these hairs, than those in their immediate neighbourhood converge to that part of the leaf, and all turning in, they enfold the unfortunate intruder. Mr. Darwin has seen a small butterfly entrapped by the Sundew, and another observer saw a large living dragon-fly, with its body firmly held down by two of the leaves. In ten seconds after the insect touches them the movement begins; in five minutes the hairs are strongly curved inwards; and in half an hour the grasp is concluded; nor are these movements dormant even during the night. Darwin, in his most interesting work on Insectivorous Plants, says: "I gathered by chance a dozen plants bearing fifty-six fully expanded leaves, and on thirty-one of them dead insects or remnants of them

adhered; and no doubt many more would have been caught afterwards, by these same leaves, and still more by those yet unexpanded." Yet the heavy drops of rain, the nodding flower, or the sweeping grass-blade, never cause these clutching movements. Well for the plant that it is so, for were it otherwise, the Sundew would die before its time, of its useless activity; for the leaves become inert after repeated exertions.

It is due to the skilful experiments of Darwin—experiments made with the insight of genius, and a perseverance which can but command our wonder and admiration—that after years of discussions and surmises we have come to understand the habits of the Sundew; for these experiments of his have resulted in positive proofs, and not in uncertain theories or suggestions towards truth, and have opened a new world of wonder for us all. He has termed these and other plants possessing like peculiarities carnivorous plants, and has shown that these leaves are destined to catch the prey on which they must feed. For the last fifty years some botanists have suggested that this might be the case, and more than one has placed small fibres of meat on these leaves, and expressed a conviction of what is now known to be the fact, that the plants throve all the better for their animal food. Yet these experimenters met a few years since with ridicule as a reward for their pains; and one learned botanist asserted that to suppose that the leaves of these plants "could absorb and dissolve animal substances was too evidently in disagreement with our knowledge of the whole course of vegetable nutrition to deserve to be seriously discussed."

But Mr. Darwin, after investigations pursued for fifteen years, has set at rest all the speculations and reasonings on the subject, and has pointed out beyond all question that it is substances alone which contain nitrogen that furnish the food of these plants, which indeed get little nourishment from the small roots growing in a soil from which little is to be derived. Their viscid secretion is a baited trap for the unwary, and this substance will dissolve completely pieces of the white of egg, tiny shreds of meat, cheese, drops of milk, and such parts of insects as the plant can digest, leaving the undigested portion to be cleared away by the winds. This secretion acts on them in exactly the same way as the gastric juice of mammals, and the digested matter is afterwards absorbed, the whole process differing from that of animals in this only: that the operation goes on in the plant before our eyes, while that of the animal is carried on out of sight. But these leaves are neither to be trifled with nor deceived. Overfeeding is as fatal to them as even to human beings; for when Mr. Darwin gave them too much cheese or too large a fibre of meat, they rapidly bent their tentacles inwards, and, as if in greediness, secreted their acid copiously, but after a while actually died of surfeit.

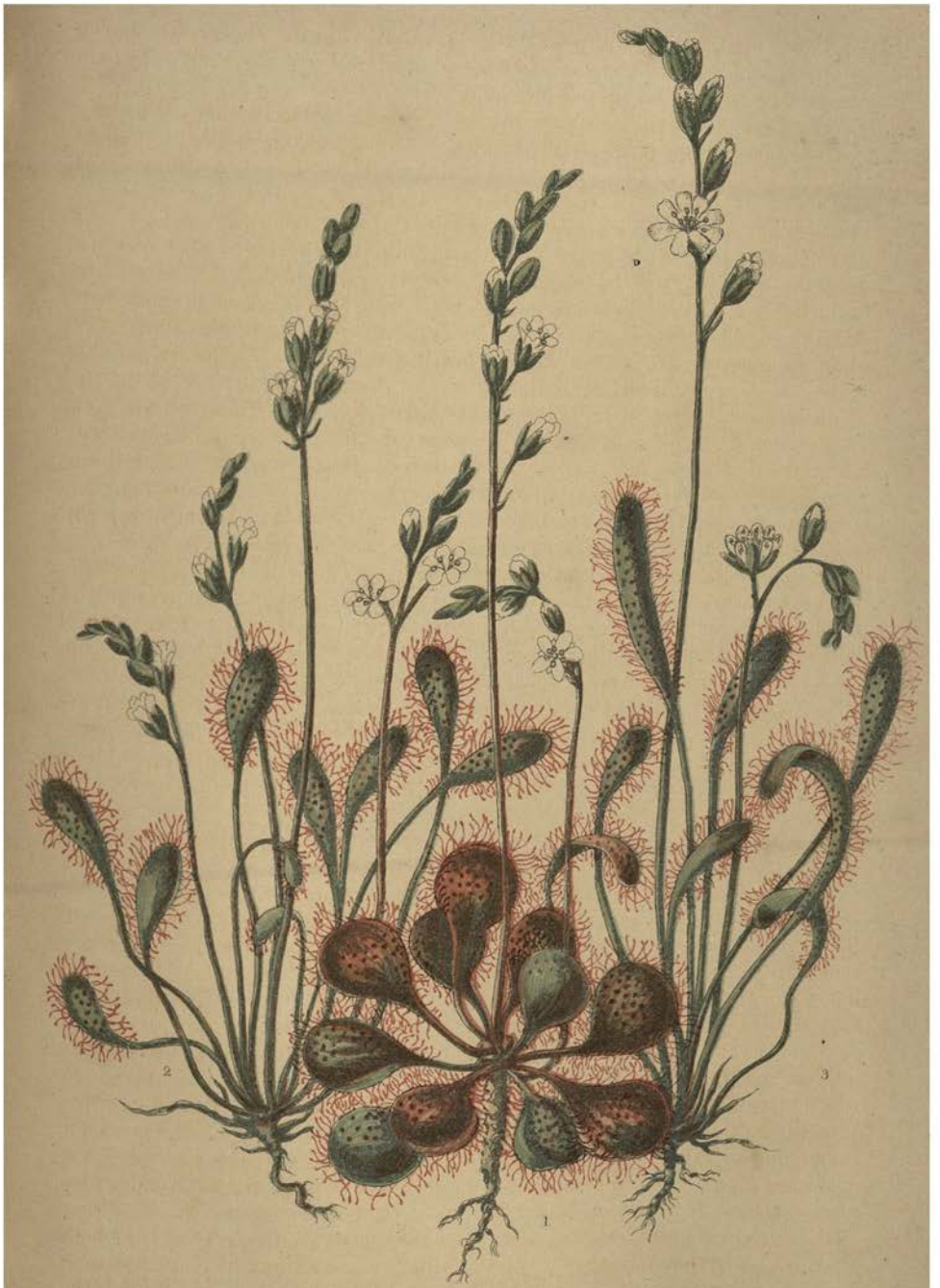
Raw meat and a decoction made from the leaves of young cabbages seem to be the substances which act most energetically on these leaves, their hairs bending inwards over them with great rapidity. But the Sundews reject those objects which contain no nitrogen. Many insoluble and inorganic substances, as scraps of glass, bits of quill, gun-cotton, which the gastric juice of the animal cannot digest, were at first closed in upon by the hairs, but not held in by them, and failed to excite any increased flow of acid. "That a

plant and an animal should pour forth the same, or nearly the same, complex secretion, adapted for the same purposes of digestion," is, as Mr. Darwin remarks, "a wonderful fact in physiology."

The tentacles of these plants are most beautiful objects when seen under a microscope of high power. If one of these is cut off and soaked for about two days in glycerine, by which means the vegetable tissue is macerated, the spiral vessels which run up from the blade to the gland look like little coils of wire, so delicate and slender that no human hand could make such.

Some accounts of those vegetable traps, the butterworts and bladderworts, occur on later pages of this work, but no movements similar to these and the Sundews seem to belong to any other of our wild flowers, though some show considerable sensitiveness to the touch. The movements of the stamens of some, when touched by the feet of an insect or the point of a needle, are due to vegetable irritability. The flower of the barberry is so affected by the slightest touch that the anthers quickly turn inwards. Those of the rock rose are equally sensitive, and the stamens of the pellitory of the wall will when ripe discharge their pollen, if but a foot of an emmet touches them. Some other wild flowers, and garden flowers too, catch insects by holding fast those which come to taste their sweets. Our red German catchfly (*Lychnis viscaria*) and some species of silene are in summer months often darkened by little crowds thus entrapped. The tall purple loosestrife (*Lythrum salicaria*), which makes our river-sides so gay with its pyramids of purplish crimson flowers, is another temptation to insects, and detains them by hundreds. That well-known tree, the Tacmahac poplar (*Populus balsamifera*), has its buds from autumn till the leafing season so covered with a glutinous yellow resin that multitudes of the latest and earliest insects of the year are ensnared by it. Even the large leaf of the teasel of our hedges (*Dipsacus sylvestris*) forms a hollow basin in which the dew and the rain from heaven form a little crystal pool, and into this many a thirsty insect plunges, only to be drowned.

But though our Sundews have no congeners on our native soil, yet the well-known plant of our hot-houses, the Venus' fly-trap (*Dionœa muscipula*), presents a still larger and firmer trap in its leaves, which are surrounded by bristles, and which close tightly over large butterflies, honey bees, and even beetles, whose decomposed remains emit a most intolerable odour. Three stiff hairs in the centre of each lobe of the leaf hold fast these creatures, which might otherwise be large enough to escape. These steel-like traps have also a secretion which completely absorbs and digests insects, and pieces of meat also form a welcome meal to them. This plant excited the interest and wonder of Linnæus, when a drawing and description of Dionæa were first sent him by our great naturalist Ellis, about the year 1768. Linnæus was greatly astonished at a mechanism so evidently intended for entrapping and destroying insects, and said that, though he had seen and examined no small number of plants, he had never met with so wonderful a phenomenon. It does not, however, appear that he took quite the same view as did Ellis of the use, for the latter remarks of the contrivances of the plant, that they show that "Nature may have some views towards its nourishment in forming the upper joint of its leaf like a machine to catch food; for upon the



1. ROUND-LEAVED SUNDEW.
Drosera rotundifolia.

2. LONG-LEAVED SUNDEW.
Drosera intermedia.

3. GREAT SUNDEW.
Drosera anglica.

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middle of this lies the bait for the unhappy insect that becomes its prey. Many minute red glands cover its surface, which perhaps tempt the poor animals to taste, and the instant these tender parts are irritated by its feet, the two lobes of the leaf rise up, grasp it fast, lock the rows of spines together, and squeeze it to death." He adds that, lest the strong efforts for life in the creature just taken should serve to disengage it, three small erect spines are fixed near the middle of each lobe, among the glands, that effectually put an end to all its struggles; nor do the lobes ever open again while the dead animal continues there. Apparently the first hint of the use of the insect to the plant was thus given by Ellis, whose observations on zoophytes and other natural objects were so valuable an addition to science. Yet even he little thought that on the peaty bogs of his native land lay thousands of vegetable insect traps, with a somewhat similar mechanism, and which were daily nourished by crowds of creeping or flying animals.

Those wonderful flowers, the different species of *Sarracenia*, often seen in our hot-houses, brought hither from America, and termed side-saddle flowers, from the shape of the sepals, are now known to be carnivorous plants, devouring their insect prey by myriads. Just within the rim of their pitchers lies a sweet viscid fluid, which attracts not only the tiny insects that come to sip the nectar, but large living creatures, as bees and spiders. At the smooth base of this pitcher there lies a limpid fluid, possessing digestive properties. The descent into this gulf is rapid and easy, for the inner surface on the upper part to the middle of the funnel is covered with a soft velvety hairiness quite smooth to the touch. But from the middle of the tube its inner surface is clothed with bristles turning downwards, which gradually become larger till near its base, when again all is smooth, rendering the upward path a hard, thorny, and inaccessible one to the insects whose gliding downwards was so easy and pleasant.

The beautiful flowers, too, of the Virginian swallow-wort (*Asclepias syriacus*) are consummate insect-destroyers. Dr. Barton says that it is scarcely possible to find a blossom which has not entrapped its victims. Like the flowers just described, the way upwards, when once the descent is made, becomes hard, rough, and impossible to any but the largest and strongest insect, which has glided into them but to die there. In the State of Virginia whole acres of ground are sometimes covered with these flowers, and the whole surrounding atmosphere of such places is rendered disgusting by the putrescence of the decomposing matter within these blossoms. As we think of the innumerable swarms of insects which perish thus, we can only infer that this fatal power given to plants over the insect race is in accordance with that law of Nature by which in air, on land, or in the sea, one kind of created thing preys on another, keeping the numbers of all in due bounds, and providing for that infinite variety which gives to earth one of its greatest charms.

2. **Spathulate-leaved Sundew** (*D. intermedia*).—Leaves all from the root, erect, oblong, broad at the upper part, and tapering towards the base; leaf-stalks smooth; seeds with a rough, not chaffy coat. Plant perennial. This Sundew sometimes grows in the bogs with the round-leaved species, but it is less frequent, and is altogether a smaller plant. It is more abundant in the south than in the north of England, and, like the other species, its leaves

are frequently darkened with the remains of insects. Its flowers are white, and it blossoms in July and August.

We never see this plant without recalling the anecdote of the little Swedish naturalist, Pyppon. The narrative is pleasantly told by Dr. E. D. Clarke, in his voluminous "Travels." This little Pyppon was a barefooted boy who, at the time of the traveller's visit to Sweden, was apprenticed to an apothecary. His love for natural history was so great, that he rose daily at three o'clock in the morning to ramble over the country in search of plants and insects, hiding them in his hat lest they should be seen by his master. The apothecary thought, perhaps with some reason, that these pursuits might prevent him from giving due attention to the business of the shop, and therefore he opposed them angrily. As often happens, however, enthusiasm is the secret of success; and the ardent young naturalist had searched the neighbourhood so well, that he knew the habitat of every plant which grew in it. Dr. Clarke told this boy that he had been looking in vain for some specimens of the Siberian sowthistle, which was said to grow near the town; and he had scarcely uttered the word, when the young enthusiast dashed from the spot, and, running as fast as possible, soon returned with the plant in his hand. Many a happy hour was spent by young Pyppon with his new friend, who purchased various articles from the shop that the boy might have to bring them, and who, at length, succeeded in persuading his master to allow more scope to his favourite pursuits. One long and happy day was granted, in which Pyppon was permitted to accompany Dr. Clarke to Tornea, and the parting was at last very bitter to the hitherto friendless boy. When the traveller asked him what he should send him as a gift from England, he replied with characteristic simplicity, and with eyes filled with tears, "If you should remember me when you arrive in your country, send me *Drosera longifolia;* I am told it is a common plant in England." In explanation of the name just used, it should be stated that *D. intermedia* and *D. anglica* were formerly regarded as one species under Linnæus' name *D. longifolia.*

3. **Great Sundew** (*D. anglica*).—Leaves all from the root, erect, oblong, on very smooth stalks; seeds with a loose chaffy coat. Plant perennial. This is the rarest species, growing, like the others, in boggy places. Its leaves are long and narrow. It occurs in some parts of Scotland, and in Lancashire, Norfolk, Devonshire, and some other English counties, but is more frequent in Ireland.

Order XI. POLYGALEÆ—MILKWORT TRIBE.

Sepals 5, unequal, the two inner larger, generally petal-like; petals 3—5, unequal, more or less combined with the filaments; stamens 8, in two equal parcels; anthers 1-celled, opening by pores at the summit; pistil 1; capsule 1—3-celled; seeds pendulous. This Order, though possessing but one genus of British plants, has many exotic genera, several of which are well worthy the attention of the gardener. They are either herbaceous or shrubby, and some are remarkable for their beauty or neatness, and others for their medicinal properties. Several of them are very small. Our native species

is not a large plant, and dwarf specimens of the Purple Milkwort of North America are frequently not more than an inch high. The shrubby species vary from humble rigid plants to tall, graceful, drooping ones. The leaves are generally bitter and astringent, and the roots, which are especially so, are also acrid, and somewhat resinous in flavour. Our British Milkwort has these properties, but the species most remarkable for them is the North American Snake-root (*Polygala senega*), which has been highly extolled as a medicine by some practitioners. The well-known Rhatany root of Chili is the root of a species of Krameria, and possesses tonic and astringent properties. According to the analysis of a French chemist, it contains gallic acid, but neither tannin nor resin.

MILKWORT (*Polýgala*).—Sepals 5, the two inner coloured, wing-shaped; petals combined with the filaments, the lower one keeled; capsule flattened, 2-celled, 2-valved; seeds downy, crested at the base. Name from the Greek, signifying much milk, the juice of the root being milky.

MILKWORT (*Polygala*).

Common Milkwort (*P. vulgáris*).—Lower petal crested in a starlike manner; wings of the calyx about equal in length to the corolla; bracts three at the base of each flower; stems simple, ascending; leaves narrow; branches procumbent. Plant perennial. Those who are accustomed, during May and June, to wander in the country where the soil is of chalk, and where hilly pastures and open heaths abound, well know this pretty flower. Its tufted stems, copiously furnished with dark-green leaves, and terminated by spikes of purple, pale-blue, lilac, or purplish-red flowers, are very ornamental. The blossom of the Milkwort is very singular, and often puzzles the inexperienced botanist by its general aspect of resemblance to the butterfly-shaped flowers which belong to the Leguminous Order; but it is rather the calyx than the corolla which is, in this case, butterfly-shaped. One of its old names was Hedge-hyssop; the French term it *Le Polygale*, the Germans *Kreuzblume*, the Dutch *Kruisbloem*; and it is the *Polygala* of the Italian and Spaniard. But its old English names of Rogation Flower, Gang Flower, and Procession Flower, invest this plant with a degree of interest, by reminding us of the ancient usages with which it was connected. Rogation Sunday was the Sunday before Ascension Day, on the three days preceding which it was customary to offer prayers against plagues, fires, and wild beasts. Hence these days were termed Rogation days, and as the bounds of the parish were traversed on one of the days, it was termed also Gang week. On this day it was formerly the custom of the clergy to walk around these limits, accompanied by the churchwardens and parishioners, many carrying garlands of flowers; after which the whole company went into the fields, and implored that God would avert pestilence, tempests, and other ills. Mention of these processions and litanies occurs as early as the year 550 of the Christian era, and remains of them yet exist in the custom of walking in procession around the bounds of the parish on one day of Rogation week.

In Queen Elizabeth's time, the 103rd Psalm was usually sung on these occasions; and Izaak Walton tells how the pious Hooker took these opportunities to "drop some loving observations, and to express some pleasant

discourse with his parishioners." There was something very beautiful and touching in these processions, and they seemed a natural and thankful way of pouring out the praises of a glad heart to God in the midst of His works; but like so many other customs of those days, innocent and even laudable in themselves, they soon became perverted to seasons of revelry. That such was the case with Rogation ceremonies, both the old poems and sermons of those days abundantly prove. In one of the latter, the preacher exclaims, "Alacke for pitie, these solemn and accustomable processions be nowe growen into a right foule and detestable abuse; so that the most part of men and women do come forth rather to set out and shew themselves, and to passe the time with vayne and unprofitable tales and merrie fables, than to make generall supplications and prayers to God for their lacks and necessities."

George Herbert spoke of this practice as a pious and thanksgiving custom; and George Wither praises it, too, as he says—

> "That every man might keepe his own possession,
> Our fathers used a reverend procession,
> With zealous prayers, and with praiseful cheere,
> To walk their parish limits once a yeare;
> And well-known markes, which sacrilegious hands
> Now cut or breake, so border'd out their landes,
> That every one distinctly knewe his owne,
> And many brawles now rife were then unknowne."

Our Milkwort seems in those days to have been generally recognised as a proper adornment to the garland carried on these occasions; for Bishop Kennet in naming it says, "Gang-flower, Rogation-flower; a sort of flower in prime at Rogation week, of which the maids make garlands, and use them in these solemn processions." Gerarde speaks also of its being used at this time, and says, "It serveth well to the decking up of houses and banquetting-rooms, for places of pleasure, and for beautifying of streets in the Crosse or Gang-week, and such like."

Shaw, in his "History of Staffordshire," speaking of Wolverhampton, says, "Many of the older inhabitants can well remember when the sacrist, resident prebendaries, and members of the choir, assembled at Morning Prayer on Monday and Tuesday in Rogation week, with the charity children, bearing long poles clothed with all kinds of flowers then in season, and which were afterwards carried through the streets of the town with much solemnity; the clergy, singing men and boys, dressed in their sacred vestments, closing the procession, and chanting, in a grave and appropriate melody, the Canticle, 'Benedicite opera,' etc."

This ceremony is said by Sir Henry Ellis to be of high antiquity, its origin having been, probably, the Roman offerings of the Primitiæ. Like many other Pagan ceremonies, it was adapted by the early Christians to a purer worship. It was discontinued about a century since. M. Chateaubriand, in his "Beauties of Christianity," gives a most glowing description of the manner in which it is still observed in some parts of France.

Our Milkwort is little heeded now by any but the lovers of wild flowers; but few of these would pass it without a thought of praise for its beauty, as they see it among the short grass of the hill-side, where it

> "Purples all the ground with vernal flowers."

1. COMMON MILKWORT. Polygala vulgaris
2. SMOOTH SEA-HEATH. Frankenia Levis
3. POWDERY SEA-HEATH. Frankenia pulverulenta
4. SIX-STAMENED WATER-WORT. Elatine hexandra
5. EIGHT-STAMENED WATER-WORT. Elatine hydropiper

Pl. 36.

The Common Milkwort is the only British species;* but many very handsome *Polygalas* are brought us from other lands, and some continue in flower in the greenhouse throughout the winter. In Arabia, Brazil, China, Java, and several countries, various species are highly prized. In our native kind of Milkwort, the somewhat creamy substance which exists in the root is bitter and slightly astringent; but the *Polygala venenata* of Java is said to possess very powerful properties. Commerson states that when he touched a leaf of this plant with the end of one of his fingers, he was seized with long and violent sneezings, and an oppressive faintness.* His guide cautiously avoided coming in contact with it, and the Javanese generally have great dread of its poisonous effects.

Order XII. FRANKENIACEÆ.—SEA-HEATH TRIBE.

Sepals 4—6, united into a furrowed tube; petals of the same number as the sepals, furnished with claws, having usually scales at the point of union of the claw with the limb; stamens equal in number to the petals; ovary 1; style very slender, 2 to 5-cleft; capsule 1-celled, 3 to 5-valved; seeds very small, attached to the edges of the valves. The flowers are solitary and regular, arising from the forks of the branches or the axils of the upper leaves. The leaves are small, oblong, and without stipules.

SEA-HEATH (*Frankénia*). — Style 3-cleft; lobes oblong, with the stigma on their inner side; capsule 3—4-valved. Name from John Franken, who first enumerated the plants of Sweden, and who died in 1661.

SEA-HEATH (*Frankénia*).

1. **Smooth Sea-Heath** (*F. lævis*).—Leaves narrow, rolled back at the margin, smooth, fringed at the base. Plant perennial. We shall not easily forget the appearance of the salt marsh on which for the first time we discovered this rare flower. On many a marsh and chalky cliff had we long searched in vain for the Sea-Heath, and the botanist will appreciate the pleasure which the first sight of the plant afforded. It was a bright day, early in September, when we visited Shellness, a sandy margin of the sea, about four miles from Ramsgate, and the way to which lies over a wide, grassy, marshy flat, drear enough in general appearance, but affording to the botanist a wealth of plants peculiar to the saline soil. The sands were brown with the dried remnants of the tall sea-side grasses; and the sharp triangular

* [Since the above lines were written the plant has been more carefully worked out; and though a good deal of difference of opinion still prevails concerning them, several distinct forms are recognised by some as species, by others as varieties or sub-species of *P. vulgaris*. Their differences may be briefly stated as under:—

P. vulgaris, proper.—Stem rising obliquely with *straight* branches and slender lance-shaped leaves, many flowers on each stem, the large sepals broader than the capsule

P. oxyptera.—Branches *wavy*, leaves slender; large sepals shorter and *narrower* than the capsule.

P. depressa.—Stems wavy, leaves nearly opposite and in two rows, the lower ones spoon-shaped, flowers fewer.

P. calcarea.—Branches numerous, *rooting* and giving rise to new plants; radical leaves forming a rosette, stem leaves oblong; larger sepals broader and longer than capsule.

P. amara.—Much smaller in all respects than the others; leaves spoon-shaped, forming a rosette; flowering branches produced from the axils; larger sepals narrower than the capsule.—E. S.]

leaf of the salt-marsh club-rush (*Scirpus maritimus*) seemed well to defend the brown bristly clusters which grew at the top of its tall stem; while the less frequent, but dark and glossy clusters of the great sharp sea-rush (*Juncus acutus*), stood up in leafless hardihood, among the barren scapes which looked like leaves. A carpet of flowers was at our feet, for the thrift, with its pink tufted blossoms whitening with age, stood above the thousands of lilac starry flowers which studded the slender branches of the sandwort (*Arenaria marina*), and almost hid from view the little pale pink blooms which still stood here and there on the spreading branches of the sea milkwort, and which a month or two earlier had doubtless grown there in great multitudes.

On the sand, the branches of the sea purslane (*Honckenya peploides*) spread flowerless, but clothed with their four-ranked leaves; and branches of pale-green prickly foliage grew in clumps, to remind us that in earlier months the yellow-horned poppy had waved there its golden petals to the wind. The sea-holly (*Eryngium maritimum*), with its beautiful sea-green richly veined leaves, seemed so clad with prickles that we could scarcely venture to touch it; while its scaly head had almost lost all the blue tint of the florets which a short time since had enlivened its pale green. The tall starwort (*Aster tripolium*) yet bore its lilac rays around its golden disk, and, though not abundant, was still the most showy plant of the marsh. We trod every moment on some succulent bright-green stem of the jointed glasswort (*Salicornia herbacea*), whose pale-green flowers had perished long ago, but whose clear and bright stems looked almost like green-coloured glass tubes; while at every footstep we crushed some of the pale whitish-green sprays of the sea southernwood (*Artemisia maritima*), and walked on amid continual aroma diffused from the bruised plant. The little sprays of this southernwood, scarcely more than a foot high, were yet in such abundance that they gave a white tint to many a spot on which they grew, and, looked at singly, reminded one by their form, though not by their hue, of a miniature fir-tree. Then there were species of sea orache, some of them with leaves and flowers tinged with redness; but the most common kind there was the sea-side species (*Atriplex marina*), with its pale narrow leaves, and large flat seed-vessels; and here and there a clump of the sharp and spiny leaves which grew on the angled and rough stems of the saltwort (*Salsola kali*), which, though its greenish flowers were gone, still showed the three sharp-looking leaf-like bracts which had formerly grown at their bases.

We had wandered for a mile over this singular scene, now listening to the screams of the sea-bird over the waters, or to the soft murmurs of the waves which fell gently over the shelly margin, when all at once we came to some dark sprays, looking so like the branches of Heath, that we knew in an instant that the long-looked-for plant was found. The narrow, almost thread-like leaves were crowded on the branches, and there among them grew the pretty little pink campion-like flowers, so small that the half of a split pea might cover one of them, but very elegant in their form, and of a delicate rose-coloured hue. The blossom is nearly allied to the pink and campion tribe; and on pulling out the petals, we find them clawed like those of the pink, though the general structure of the plant is very different. The leaves are

very numerous, growing in bundles, and much like those of our common purple heather; and the stems are wiry and spreading. This species is found more on the eastern coast of England than elsewhere. It is not uncommon on several muddy shores of the Isle of Sheppey, in Kent; and about Yarmouth, on the salt marshes. It also grows on some sea cliffs, as at Archcliff Fort, at the west of Dover, and at Lydden Spout, which lies also at the west of that ancient town. It is unknown on our northern coasts. On those of France it is common; and the plant is called by the French, *La Frenkenne*. Backhouse, in his work on Australia, speaking of the country in the neighbourhood of Adelaide, says, that the salt marsh there was covered with two kinds of glasswort, one of which was shrubby; and that interspersed among them were two species of *Frankenia*, one of these being bushy, about a foot high, and besprinkled with rosy-pink blossoms, the size of a silver penny.

2. **Powdery Sea-Heath** (*F. pulverulénta*).—Leaves inversely egg-shaped, and blunt, smooth above, downy and powdery beneath. Plant annual. This plant is commonly enumerated among our British species, but no habitat is now known for it. It was found in the time of Dillenius on the coast of Sussex. Its stems are described as prostrate, and its flowers rather smaller than those of the smooth Sea-Heath. The Sea-Heaths in general are not sufficiently showy to obtain much attention from gardeners; but two or three species—natives of Australia and the Cape of Good Hope—have been cultivated.

Order XIII. ELATINEÆ.—WATER-WORT TRIBE.

Sepals 2—5, distinct, or growing together at the base; petals equal in number to the sepals; stamens the same in number as the petals, or twice as many; ovary with 3—5 cells, and as many styles and globular stigmas; capsule with 2—5 cells and valves; seeds numerous, wrinkled, arising from the centre of the capsule. These Water-worts are annual, aquatic, herbaceous plants, with rooting, pipe-like stems and opposite leaves. They are not showy flowers, but homely weeds, abounding in marshes and waste places in most parts of the world. They are, as far as is known, perfectly harmless; but they possess no medicinal properties.

WATER-WORT (*Elátine*).—Sepals 2—4, growing together at the base; petals 2—4; stamens 2—4, or 4—8; ovary 3—4-celled, many seeded; seeds cylindrical, furrowed, and marked with transverse lines. Origin of name doubtful.

WATER-WORT (*Elátine*).

1. **Six-stamened Water-wort** (*E. hexándra*).—Flower stalked; petals 3; stamens 6; capsule 3-celled; seeds straight. Plant annual. This, though by no means a common aquatic, is found in some lakes and pools, growing either entirely below the surface of the water, or forming dense masses at their margins. The whole plant is small, and the minute rose-coloured flowers are produced from July to September. It is recorded from several English and Scottish counties, but by reason of its small size it is an easy matter to overlook it. The Rev. C. A. Johns remarks of this plant,

in his "Flowers of the Field," that when left by the subsiding water it assumes a bright-red hue.

2. **Eight-stamened Water-wort** (*E. hydropiper*).—Flowers sessile; petals 4; stamens 8; capsule 4-celled; seeds curved. Plant annual. This species grows in similar places to the last, and flowers in the same season, but is still more rare; it is found in the Cut-mill Ponds near Farnham, in Surrey; in Worcestershire; the east end of Llyn Coron, in Anglesey; in Ireland it is recorded from Newry. and at the Lough Neagh outlet of the Lagan Canal.

Order XIV. CARYOPHYLLEÆ.—CLOVE PINK TRIBE.

Sepals 4 or 5, often connected into a tube; petals of the same number as the sepals; stamens usually twice as many as the petals, sometimes equalling them in number, and like them inserted on the stalk or ring of the ovary; ovary 1, raised on a short stalk, or inserted in a ring; stigmas 2—5, running along the inner surface of the styles; capsule 1, or imperfectly 3—5-celled, opening by twice as many teeth or valves as there are styles; seeds inserted on a central column. The plants of this order are herbaceous or shrubby, inhabiting the mountains and pastures of the temperate and frigid zones of the globe. In Europe they are particularly abundant, and least so in Africa and America. Many, as the Carnations and Pinks, have highly fragrant flowers; and others, like various species of Lychnis and Catchfly, have blossoms of rich hue and beautiful form. Our woods and meadows are adorned by the wild species, and Cuckoo-flowers, and Stitchworts, Sandworts, Spurreys, Catchflies, and Campions, belong to this tribe. The medicinal properties existing in the *Caryophylleæ* are not very numerous; and the beautiful Pink genus is its greatest attraction. This order is again divided into the two groups, or sub-orders, *Silénecæ* and *Alsínecæ*.

Sub-order I. PINK GROUP (*Silénecæ*).

Sepals connected into a tube; stamens united at the base with the stalk of the ovary.

* *Calyx 5-cleft; petals 5, with long claws; stamens 10.*

1. PINK (*Diánthus*). — Calyx tubular and toothed, with two or more opposite bracts at the base outside; styles 2; capsule 1-celled, opening at the top with 4 valves; seeds flattened. Name from the Greek words for Jupiter and a flower, expressive of its beauty and fragrance as worthy of the gods.

2. SOAP-WORT (*Saponária*).—Calyx naked at the base; styles 2; capsule 2-celled at the base, opening with 4 valves; seeds rounded. Name from *sapo*, soap; the plant possessing the soapy principle.

3. CATCHFLY (*Siléné*).—Calyx naked at the base; petals generally crowned at the top of the claw; styles 3; capsule imperfectly 3-celled, opening at the top with 6 valves. Name supposed to be from the Greek *sialon* (saliva), on account of the viscid moisture on the stalks of some species.

4. CAMPION (*Lýchnis*).—Calyx naked at the base; petals generally crowned at the top of the claw; styles 5; capsule opening at the top with

1. DEPTFORD PINK.
Dianthus armeria.

2. PROLIFEROUS PINK.
D. prolifer

3. CLOVE PINK.
D. caryophyllus

4. MOUNTAIN PINK.
D. cæsius

5. MAIDEN PINK.
D. deltoides.

Pl. 37.

5 or 10 teeth. Name from the Greek *lychnos*, a lamp; the cottony down on the leaves of some species having been used as wicks for lamps.

5. CORN-COCKLE (*Agrostémma*).—Calyx naked at the base, tough, with 5 teeth. Name signifying, in Greek, crown of the field.

Sub-order II. CHICKWEED GROUP (*Alsíneæ*).

Sepals distinct; stamens inserted into a ring beneath the capsule, which is not stalked.

6. PEARLWORT (*Sagína*).—Sepals 4—5, spreading when in fruit; petals 4—5, sometimes wanting; stamens 4—10; styles 4—5; capsule 4—5-valved. The name, in Latin, signifies fattening meat, but is inappropriate.

7. MŒNCHIA.—Sepals 4, erect; petals 4; stamens 4; styles 4; capsule opening at the top with 8 teeth. Named in honour of Conrad Mœnch, Professor of Botany at Hesse Cassel.

8. JAGGED CHICKWEED (*Holósteum*).—Sepals 5; petals 5, toothed at the margin; stamens 3—5; styles 3; capsule opening at the top with 6 teeth. The name in Greek signifies all bone, but the reason of its being so applied is doubtful.

9. SPURREY (*Spérgula*).—Sepals 5; petals 5, entire; stamens 10 or 5; styles 5; capsule 5-valved. Named from *spargo*, to scatter, from the seeds being so widely scattered.

10. STITCHWORT (*Stellária*).—Sepals 5; petals 5, deeply 2-cleft; stamens 10; styles 3; capsule opening with 6 valves or teeth. Name from *stella*, a star, from the form of the flowers.

11. SEA-PURSLANE (*Honckenýa*).—Sepals 5; petals 5; stamens 10; styles 3—5; capsule with 3, 4, or 5 valves. Name from Honckeny, a German botanist.

12. SANDWORT (*Arenária*).—Sepals 5; petals 5, entire; stamens 10; styles 3; capsule opening with 6 valves. Name from the Latin *arena*, sand, from the soil on which most of the species grow.

13. MOUSE-EAR CHICKWEED (*Cerástium*).—Sepals 5; petals 5, 2-cleft; stamens 10 or 5; styles 3 or 5; capsule tubular, opening at the top with 6 or 10 teeth. Name from the Greek *ceras*, a horn, from the shape of the capsule in some of the species.

14. CYPHEL (*Cherléria*).—Sepals 5; petals 0 or 5, exceedingly minute, notched; stamens 10, the 5 outer ones with glands at the base; styles 3; capsule 3-valved. Name from J. H. Cherler, an eminent botanist.

15. BUFFONIA.—Sepals 4; petals 4, entire; stamens 4; styles 2; capsule 1-celled, 2-valved, 2-seeded. Name from the celebrated naturalist, Buffon.

1. PINK (*Diánthus*).

* *Flowers clustered.*

1. **Deptford Pink** (*D. arméria*).—Stem and leaves downy; flowers in close tufts; calyx scales very narrow, downy, as long as the tube. Plant annual. This is not generally a common plant in England, but it grows in many counties; it is rare in Scotland and altogether unknown in Ireland. The author once gathered about twenty specimens, on a hedge bank between

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Cobham and Higham, in Kent, and has found it near Sandwich, in the same county, with a stem nearly a yard high. The stem, however, is usually from a foot to a foot and a half in height, the upper part being much branched. It is rather downy, and has at its summit a little cluster of small rose-coloured flowers, which are dotted with white. The whole appearance of the plant is so like that of Pinks in general, that no one would mistake it; and one of the most obvious features of difference between this and the next species, is the little white dots which always besprinkle its petals. This Pink opens in July and August. It grows in fields, and on hedge banks. It appears to be very uncertain or temporary in its localities, and usually occurs in but small quantity wherever found.

2. **Prolifèrous Pink** (*D. prólifer*).—Stem smooth; leaves rather rough at the edge; flowers in heads; calyx scales membranous, transparent. Plant annual. This rare species of wild Pink is found chiefly in gravelly pastures. Its flowers are purplish-red, and grow on a stem which is about a foot in height; and the plant may be known from the last species by the dry brown scales which enclose the heads of the flowers. Another characteristic of this species is, that only one of the flowers in the cluster is open at a time. This mark, which in the Proliferous Pink is constant, is shared, though in a less degree, by the Deptford Pink; as in this latter kind, we may occasionally, though rarely, find more than one flower expanded. This plant flowers in June.

* * *Flowers not clustered.*

3. **Clove Pink, Carnation,** or **Clove Gillyflower** (*D. caryophýllus*).—Flower solitary; calyx with four broad-pointed scales one-fourth of its whole length; petals notched; leaves slender, glaucous, with smooth edges. Plant perennial. Fragrant as are the wallflowers, which send their odours from tower and turret, yet they are not more sweetly scented than this "chronicler of crumbled halls." On the very summit of some of those fortresses which our warlike ancestors built for the defence of the adjacent country, this Pink grows in luxuriance, nodding to the breeze which sweeps over the green ivy. No wonder that the sight of it on the old Norman keep of Rochester Castle suggested the lines by H. G. Adams on this flower:—

"The Castle Pink, the Castle Pink,
How wildly free it waves,
Exposed to every blast that blows,
To every storm that raves;
It heedeth not the pelting rain,
Nor whistling gales that sweep
Around the time-worn battlement,
Around the massy keep;
But smileth still, and flourisheth
The various seasons through,
For God He nourisheth the plant
With sunshine and with dew.

"The swallow loves the Castle Pink;
And now and then a bee,
Borne upwards by a sudden gust
Clings to it lovingly;
Like one who journeyeth afar
Where unknown realms extend,
Whose heart is gladden'd by the sight
Of some familiar friend;
The dusky rooks around it caw
When evetide veils the sky,
They mark it blooming sweetly there,
And know their home is nigh."

This Pink grows on Sandown Castle, near Deal, on the old walls at Norwich, and a few other places in England. It is not likely that it is truly wild on any of these situations, but it has been known to grow on our castles for at least a couple of hundred years; and strange it is that the habitats recorded for this and some other plants, should, century after century, be

the same. Thus, in another instance, John Ray mentioned that the beautiful little sea lavender (*Státicé spathulata*) grew at Ramsgate, in Kent; and there it still grows in great luxuriance, on one part of the chalk cliff between Ramsgate and Broadstairs, in such profusion, as to clothe some yards of the surface of the cliffs with its flowers, while it is to be found on that spot only. Quite as singular is it that the hispid marsh mallow (*Althæa hirsúta*), which was recorded as growing near Cobham more than fifty years ago, still grows there, though it is found in only one other part of the kingdom. The *Dianthus caryophyllus*, with its pleasant clove-like odour—the July flower of our ancestors—varies in hue from a deep red to a pale rose-colour, or white. It is usually about a foot high. It is the origin of our valued flower the Carnation, and some writers have thought that we owe to it all our beautiful varieties of Pinks, Sweet-Johns, and Sweet-Williams, of the garden. These have long been favourite border-flowers, and Gerarde tells how, in his day, the Sweet-William was esteemed for its "beauty to deck up the bosoms of the beautiful, and for garlands and crowns for pleasure." These flowers, however, owe their origin to *D. barbatus*. Other species commonly grown in our gardens are the Feathered Pink (*Dianthus plumarius*) of southern Europe, and the Carthusian Pink (*Dianthus carthusianorum*) of Germany. Dr. Withering remarks on this subject: "Gardeners well know that from the seed of the Carnation Pinks are never obtained, nor from that of Pinks can Carnations be procured. In fact, these favourite flowers originate from distinct species, and are not mere varieties of the same, as has been erroneously, and even recently, intimated. The art of floriculture, sometimes despised with a reprehensible degree of fastidiousness, has, in this instance, transformed a plant, comparatively obscure, into one of the most delightful charms which the lap of Flora contains. The surprising metamorphoses which the most indifferent are accustomed to contemplate with pleasure, were probably commenced under a more genial sky than that of Britain; for we learn from Pliny, that these productions were unknown to the Greeks, and equally so to the Romans, until the Augustan age, when they were obtained from the brave Biscayans, as one trophy resulting from the conquest of that province, and were thence called *Cantabrica*. Our gardens may now receive embellishments from more than three hundred different kinds of Carnations, under the denominations of Flakes, Bizarres, and Picotées (*Picquetté*, spotted); and these may be propagated by seed, but more successfully by cuttings, about the month of July."

Rare as our Carnation Pink is in this country, it is not uncommon on the south side of the Swiss Alps; and Meyen says, that at St. Jago de Chile it is quite as beautiful as with us, and probably more aromatic. It has been cultivated from time immemorial in Europe for its spicy odour and its beauty. A pleasant syrup is still in some countries made of its flowers, which our fathers termed Sops-in-wine, because of their old uses in giving flavour to the festive cup. It appears in former days to have been customary for persons who were betrothed to wear some flower as an external and conspicuous token of their engagement. The Carnation was, it would seem, often chosen for this purpose; hence the lines of Spenser:—

"Bring Coronations and Sops-in-wine,
Worn of paramours."

Michael Drayton calls them Cloves of Paradise; indeed, of all the flowers prized by our forefathers, this, the *Clove de giroflée*, was, next to the rose, the highest in esteem. It is amusing to read its praises, written by Lawson at the close of the sixteenth century, where he terms it the king of flowers, except the rose; and prides himself on being the possessor of Gillyflowers "of nine or ten different colours, and divers of them as bigge as roses." "Of all flowers, save the damask rose," he says, "they are the most pleasant to sight and smell;" and adds, that "their use is much in ornament, and comforting the spirites by the sense of smelling." "There was a variety of this flower," says Mr. Hudson Turner, "well known in former times as the wall gillyflower, or bee flower, because growing on walls, even in winter, and good for bees;" but this was our wallflower (*Cheiranthus cheiri*), which the old herbalists commonly called the winter gillyflower. "The reserved rent," says Mr. Turner, in his paper on the Horticulture of the Middle Ages, "the *unius clavi gariofili*, which is of such frequent occurrence in mediæval deeds relating to land, meant simply the render of a Gillyflower, although it has usually been understood to signify the payment of a Clove of commerce." "The incorrectness of this rendering," adds this learned and interesting writer, "must be apparent, if we recollect that the Clove was scarcely known in Europe in the eleventh and twelfth centuries, when this kind of reserved rent was most common."

The French term the Clove Pink *L'Œillet*, and the Germans *Die Nelke*. It is the *Angelier* of the Dutch, the *Garofano* of the Italian, and the *Clavel* of the Spaniard. In its cultivated form of the Carnation, it is the chief florist's flower of Germany. In the beginning of the eighteenth century, nearly 400 varieties had been enumerated by gardeners, and that number is probably now increased. One addition to their worth as garden-flowers is, that the Carnation and most of the Pinks have their foliage as abundant in winter as in summer, and of as rich a sea-green tint. The Dutch, who cultivate all the tribe largely, as we do, call the Sweet-Williams *Keykens*, which is their name for a nosegay. With us they are prized in the grandest as well as the humblest garden, and many may say with Hurdis—

> "Ye botanists, I cannot talk like you,
> And give to every plant its name and rank,
> Taught by Linné, yet I perceive in all,
> Or known or unknown, in the garden raised,
> Or nurtured in the hedge-row or the field,
> A secret something which delights my eye
> And meliorates my heart. And much I love
> To see the fair one bind the straggling Pink,
> Cheer the sweet rose, the lupin, or the stock,
> And lend a staff to the still gadding pea;
> And let me praise the garden-loving maid,
> Who innocently thus concludes the day:
> Ye fair, it well becomes you!"

On a few walls in this kingdom, as on those of Ludlow Castle, the common Pheasant's-eye Pink (*Dianthus plumarius*) grows apparently wild, but it is not truly so. It is a hardy flower, and has been much cultivated by mechanics and operative manufacturers around large towns. The muslin-weavers about Paisley have been celebrated for the beauty of the Pheasant's-eye Pinks

1. COMMON SOAPWORT.
Saponaria officinalis.

2. CORN COCKLE.
Agrostemma githago.

Pl. 38.

which adorn their gardens, and afford them so good a recreation from toil. These growers reckon above 300 varieties of this species.

4. **Mountain Pink** or **Cheddar Pink** (*D. cæsius*).—Stems mostly single flowered; scales of the calyx, roundish, slightly pointed, about one-fourth as long as the tube; leaves long and narrow, glaucous, rough at the edges; petals bearded and irregularly jagged. Plant perennial. This is an exceedingly rare species, growing on the limestone cliffs of Cheddar in Somersetshire, and bearing, in July, large fragrant rose-coloured flowers.

5. **Maiden Pink** (*D. deltoides*).—Flowers solitary; calyx scales pointed, usually 2, half the length of the calyx; petals notched; stem and leaves somewhat rough. Plant perennial. This is a rare Pink, found on dry banks, where the soil is of gravel. The stems are from six to twelve inches high, and much branched. The flower appears in July and August; it is rose-coloured, dotted with white, and has a dark ring around the centre. It is without perfume.

2. Soapwort (*Saponária*).

Common Soapwort (*S. officinális*).—Leaves opposite and connate, broad, pointed, and smooth; panicle of several large flowers. Plant perennial. This is not an uncommon plant by road-sides, and on the margin of woods and hedge-banks, but it is rarely seen at any distance from houses. It cannot be regarded as truly wild, and as it was valued by our forefathers for "decking of houses," we are doubtless indebted to them for it in our hedges. The whole herb is full of a mucilaginous juice, which will lather with hot water, and may be used as an indifferent substitute for soap. The roots contain this soapy principle (*saponine*) in a greater degree than the foliage, and might perhaps be employed with greater advantage. Saponine has been found by chemists to exist in several other of our wild and garden plants; and these plants are said, by M. Bonnet and M. Malapert, to be poisonous, in consequence. In some plants this principle exists only in the root, in others in the foliage and seed. These great chemists found that, in the corn-cockle (*Agrostemma*), it was found in the unripe seed and in the roots, but in no other part of the plant. The Nottingham catchfly (*Silene nutans*) contains at least as much saponine as the Soapwort, and here it is diffused in all parts of the plant except the seed. Our clove pink, as well as several other of our garden and wild pinks, have it also chiefly in the roots, a small portion existing in the leaves, and none in the flower or seed. The wild lychnis (*Lychnis diurna*), and the brilliant scarlet lychnis of the flower-bed, as well as the little scarlet pimpernel and some other field flowers, have it in more or less abundance. It seems to be detected chiefly in plants belonging to the Order *Caryophylleæ*, but it is quite absent from some genera of this Order, as in the sandworts and stitchworts.

On account of the quantity of the soapy principle known to exist in the Soapwort, the learned botanist Fuchs thought that this must be the plant termed *Struthium* by the ancients, which they used as soap, and also in dyeing, and which must doubtless have possessed a saponaceous juice. Difficult, however, as it may be to decide what this plant may have been, its description is not believed by learned men in general to be at all applicable in other

respects to the Soapwort. Beckmann, referring to the subject, says, "We may conjecture, with some probability, that the plant called *Gypsophila struthium* by Linnæus (which is also a plant of the Caryophyllaceous family) is the *struthium* of the ancients; and it is still used for washing in the lower part of Italy and Spain. This opinion acquires some strength by the plant having been thus adopted among the Italians and Spaniards, and because, as Pliny says, it grows on a rocky soil, and on the mountains. It is also still called Lanaria by the Calabrian peasants. It has a tender stem; its leaves are so like those of the olive-tree, that they might be confounded with them by those who are not botanists, and its root is large, but the plant is neither rough nor prickly." Theophrastus and Pliny both describe the plant as prickly, so that some difficulty occurs on this point, but Linnæus felt quite convinced that the *Gypsophila* furnished the soap of the ancients. Loffling, who found this plant in the Spanish mountains, as well as in the neighbourhood of Aranjuez, relates, that in the province of La Mancha the people boil clothes, that are to be washed, with its root, instead of soap. The juice of our Common Soapwort is used in Italy for cleansing wool and cloth; and in the Helvetian Alps the sheep, before they are shorn, are washed with a decoction of this plant; and a preparation of its roots with a mixture of ashes is commonly used there in washing linen. Gerarde tells us, that, in former days, the plant was used in baths, "to beautifie and cleanse the skin." One of its old names, also, was Fuller's herb.

The saponine principle abounds in the fruit of the horse-chestnut, which is still used in the south of Europe for washing various substances. It is certain that the ancients not only used plants in washing, but that they made soap, as we do in modern times, by a mixture of lixivious salts with grease; and that the mineral alkali of the people of Egypt was made in the time of Pliny from the ashes of plants is pretty certain. A similar alkali was used by the ancient Hebrews; and when the prophet Jeremiah said, "Though thou wash thee with nitre, and take thee much soap (*borith*)," the latter material was doubtless then in use, and was probably the *borak* of the Arab in the present day, which is procured from the ashes of the saltworts of the desert, and other plants. Some species of the fig marigold are called by these people the washing herbs. The nitre of the ancients was doubtless an alkaline salt.

The double variety of Soapwort is a pretty border plant, but it is inconvenient on account of the spreading nature of its roots, which run underground like couch. Its flowers are like those of the wild species, of a pale rose-colour. Our wild Soapwort blossoms in August and September, and sometimes bears double flowers. It grows on a stem a foot or a foot and a half in height, and the smooth leaves are of a dark glossy green. Its bitter juices were formerly considered a good remedy for bruises, and it was called Bruisewort; the French call it *La Savonnière*, and the Germans *Das Seifenkraut*. Its name of Sheepweed (*Zeepkruid*) points to its uses in Holland; and the Italians term it *Saponaria*, and the Spaniards *Jabonero*. The *Saponaria vaccaria*, a species found wild in Germany, is the celebrated Cow-herb, which is so valued by the continental herdsmen as food for their cows.

3. Catchfly (*Silène*).

** Stems tufted, short; flowers solitary.*

1. **Moss Campion,** or **Stemless Campion** (*S. acaúlis*).—Stem much branched, tufted; leaves narrow, fringed, keeled below; flower-stalk single-flowered; petals crowned, and notched. Plant perennial. We have several wild flowers which are called stemless, as the Stemless Thistle and Campion; but this is not because the stem is entirely absent, but because it is very short. In this instance the flower-stalks are two or three inches high, and this pretty Alpine Campion forms a dense matted turf, with its beautiful bright purple flowers peeping up among the foliage like stars. It is never seen on lowland ground, but is found only at the summits of our loftiest British mountains. It is one of the loveliest ornaments, during June and July, of the rocky parts of Snowdon, and on the Helvellyn side of Grisedale Tarn, in Cumberland, where—

> "Up among the mountains,
> In soft and mossy cell,
> By the silent springs and fountains
> The lovely wild-flowers dwell."

It is abundant on all the Scottish mountains; its branching stems bear a profusion of flowers, which vary sometimes to white, and are prized as alpine flowers must be, not only for their own loveliness, but from their association with the wildest and grandest scenery which earth can exhibit. Dr. J. H. Balfour, in his notice of a botanical excursion made in the Highlands of Scotland, gives us a graphic picture of the plants which adorn the alpine tracts. "The alpine veronica," he says, "there displays its lovely blue corolla on the verge of dissolving snows; the forget-me-not of the mountain summit, whose tints far excel those of its namesake of the brooks; the woodsia, with its tufted frond, adorning the clefts of the rocks; the sunny gentian, concealing its eye of blue in the ledges of the steep crags; the alpine astragalus, enlivening the turf with its purple clusters; the lychnis, choosing the stony and dry knoll for the evolution of its pink petals; the *Sonchus mulgedium*, raising its stately stalk and azure head in spots which try the enthusiasm of the adventurous collector; the pale-flowered mountain sorrel, confining itself to a single British cliff; the azalea, forming a carpet of the richest crimson; the saxifrages, with their yellow, or white, or pink blossoms, clothing the sides of the streams; the saussurea and erigeron, crowning the rocks with their purple and pink heads; the purple cinquefoil, blending its yellow flowers with the white of the alpine cerastiums, and the bright blue of the starry veronica; the Stemless Silene giving a pink and velvety covering to the decomposing granite; the yellow hawkweeds, whose varied transition forms have furnished such a fertile source of dispute among botanists; the slender and delicate grasses; the chickweeds, the sedges, and the rushes, which spring up on the moist alpine summits; the graceful ferns, the tiny mosses with their urn-like thecæ; the crustaceous dry lichens, with their spore-bearing apothecia: all these add such a charm to highland botany, as to throw into comparative shade all the vegetation of the plains."

** * Stem elongated; flowers panicled; calyx inflated, bladder-like.*

2. **Bladder Campion** (*S. inflâta*).—Stem erect; leaves oblong, tapering; flowers panicled, numerous; calyx inflated, bladder-like; petals deeply cloven, rarely crowned. Plant perennial. This species of *Silene* is not difficult of distinction, being at once recognised by its thin globular flower-cup, delicately marked with a network of purplish-brown or darker green veins. The calyx, as well as the foliage, has a pale sea-green bloom on the surface; and the plant bears its white flowers in June and July. As early as April the young shoots of the Bladder Campion are to be found under the hedge; and many of us have eaten their pale, delicate, green young leaves, and thought how much their flavour and odour resembled those of the green peas of the table. Professor Burnett remarks, that they make a very agreeable vegetable, if gathered when about two inches long; but we have found that even when boiled they retain a slight degree of bitterness, which prevents their being pleasant. As that botanist has remarked, however, this is a plant deserving cultivation, as it might be substituted for green peas or asparagus, having something of the flavour of both. This flower is very common in corn-fields, pastures, and hedges, in most parts of the kingdom, but is not universally so; for the author of these pages was once promised by a botanist, near Tunbridge Wells, the sight of a rare plant, and was somewhat amused after a long walk to find that this botanic curiosity was a fine specimen of Bladder Campion, which her companion greatly exulted in having discovered in one or two places in that neighbourhood, but which she had been accustomed to regard as scarcely more rare than a primrose. The foliage is usually smooth, but a downy variety is occasionally found. Baxter remarks, that two minute funguses, *Æcidium behenis* and *Uredo behenis*, are parasitical on the leaves and stems of the Bladder Campion. "I found them both," says this accurate writer, "on this species of *Silene*, near the road leading from Bullington Green to Cheyney Lane, near Oxford, in August, 1827. I do not know," he adds, "that either of them had been found before in England."

3. **Sea Campion, or Catchfly** (*S. marítima*).—Stems many from the same root, spreading, either single or few flowered; leaves oblong and pointed, and sometimes narrowing towards the base, finely toothed at the edges; petals crowned and deeply cleft. Plant perennial. Those who are used to gather the Bladder Campion from the lane or field, are sometimes surprised to see it growing on the sandy sea-shore, where they could expect to find little but sandworts and sea-side grasses. Excepting that its flowers are larger, and its stems much shorter, the shore species closely resembles the common Bladder Campion, having those same bladdery cups which children often snap suddenly on the back of the hand, with a sharp noise. This plant is not uncommon on the sandy or stony shore, but much more frequent up the cliffs, flowering there all the summer: it is also found by alpine rills. The Rev. C. A. Johns states, that he has found in Devonshire a variety with double flowers.

** * * Stems elongated, flowers in whorls.*

4. **Spanish Catchfly** (*S. otítes*).—Stems erect, somewhat branched, with few leaves; petals narrow and neither cleft nor crowned; stamens and pistils

1. MOSS CAMPION.
Silene acaulis.
2. BLADDER CAMPION.
S. inflata.
3. SEA CAMPION.
S. maritima.
4. SPANISH CATCHFLY.
S. otites.
5. ENGLISH CATCHFLY.
S. anglica.
6. NOTTINGHAM CATCHFLY.
S. nutans.
7. STRIATED CORN CATCHFLY.
S. conica.
8. COMMON CATCHFLY.
S. armeria.
9. NIGHT FLOWERING CATCHFLY.
S. noctiflora.

on different plants; leaves narrowing at the base. Plant perennial. This is a rare, or at least a local plant, easily known by its whorls of small flowers with their narrow petals of yellowish-white colour, which expand in July. It occurs in sandy fields in some of the eastern counties of England. The stems are about a foot high, and very clammy at the middle.

* * * * *Stems elongated; flowers in leafy clusters, alternate.*

5. **English Catchfly** (*S. ánglica*).—All parts of the plant hairy and clammy; petals small, crowned, slightly cleft or entire; flowers lateral, alternate, erect, lower ones bending downwards when in fruit; leaves narrow, tapering. Plant annual. This species, too, is somewhat local, though in many parts of England it occurs in plenty, attaining greater or less luxuriance according to the soil. Its stem is from six to twelve inches high, and it is so clammy as to be often quite disfigured by the insects adhering to it, their little wings held tightly by the viscid substance which allured them thither. The flowers, which may be found all through the summer, are usually pinkish-white, and very small; but several varieties of the plant are known, in one of which the flowers are solitary in the axils of the upper leaves. This has usually a red spot on each of its petals. It has been found wild near Wrotham, in Kent, and some other places; and it was formerly much planted in gardens, under the name of *Silene quinque-vulnera*. It grows low, and is very prolific, so that it is well adapted for sowing in pots; but it is less generally cultivated than it once was. The Dutch call this, or some other species of Catchfly, *Veldkaars*.

* * * * * *Stems panicled, leafy; calyx not bladder-like.*

6. **Nottingham Catchfly** (*S. nútans*).—Flowers all drooping one way; branches opposite, 3-forked; calyx much swollen, and marked with dark-brown lines; petals deeply cloven, crowned; stem-leaves lance-shaped, those of the root tapering at the base. Plant perennial. Those who have never scented the evening air made fragrant by a number of these flowers, can hardly imagine how powerful an odour they exhale. It has somewhat of the perfume, so like that of prussic acid, which exists in several of our flowers, as the meadow-sweet and blackthorn; but it is far more powerful than the scent of either of these blossoms; and when borne to us, as it sometimes is, on the sea-breeze, it is truly delicious. This plant flowers during June or July, on some limestone and chalk rocks of our sea-shores, as well as on those of inland districts, but is not common. On portions of the sides of those towering and majestic cliffs which border the shore for several miles along the east of Dover, as well as at some parts of the cliffs standing to the west of the town, thousands of the pretty white starry blossoms of the Catchfly may be seen in the evening, growing on stems about a foot high. Nor do these flowers wait, as some night flowers do, for darkness ere they expand; for the author has seen them in their full glory by eight o'clock, before the soft twilight has thrown its subdued shadow over the summit of the cliffs. Many a lovely flower grows on those cliffs; for although on sailing past them at a distance their white surfaces seem only streaked with stripes of verdure, yet on walking by them we find that their crags and clefts

shelter the flowers so well, and the sun shines on them so fully, that plants peculiar to the chalk could hardly find a better place of growth. Many a wanderer goes thither in the earlier part of the day, and brings home nosegays of horned-poppy, and viper's-bugloss, and sea-lavender, and pink centaury. Many such a one sees the Catchfly, and passes it by, deeming it a plant which has lost its bloom, and is all unfit to mingle with gayer, fresher flowers; he can at that time detect neither beauty nor odour. These are truly—

> "The flowers that shun the blaze of noon,
> To blow beneath the midnight moon;
> The garish world they will not bless,
> But only live in loneliness."

This plant received the name of Nottingham Catchfly, because it is common in the neighbourhood of that town. It is found also on the cliffs of the Isle of Wight, and on the mountain-limestone rocks of Orme's Head, as well as on the rocks about Knaresborough, in Yorkshire, Dovedale, and other places, growing in more or less abundance. Its profusion on the cliffs of Dover gained for it in former days the name of Dover Catchfly. It is the *Silène paradoxa* of our older botanists. It retains its peculiarity of opening only in the evening, even after it is gathered; and its scent is then almost too powerful to be borne in a room. It may be raised from seed in a garden, if the soil is chalky; but the odour there is not so powerful as when in its wild state, and in such cases as are known to the author, the plant soon degenerates.

7. **Italian Catchfly** (*S. itálica*).—Stems erect, downy, bearing several flowers; branches opposite, with blunt teeth; petals deeply cleft, not crowned; root-leaves on long stalks, tapering at the base; stem-leaves without stalks, long and narrow. Plant perennial. The white flowers of this rare plant expand in July and August, and much resemble those of the Nottingham Catchfly; but this species may be distinguished by its longer and blunter calyx. The plant is downy, and the panicles are somewhat clammy. It is certainly not a truly wild flower, but has been found on Dover cliffs and in the neighbourhood of Dartford.

8. **Striated Corn Catchfly** (*S. cónica*).—Stem erect, forked; leaves narrow, downy; petals crowned; calyx of the fruit conical. Plant annual. This is a rare species of Catchfly, with small flowers of a purplish-red colour, several of which grow on short stalks on a stem from six to twelve inches high, flowering from May to July. The calyx of the fruit, which is conical in form, is said by the Rev. C. A. Johns to have thirty furrows, while that of the *Silène noctiflóra* is ten-ribbed. Minute as distinctions of this kind are, they are quite constant, exciting the admiration of every thoughtful observer, and affording an evidence of the continual care of God over all His creation. And as we trace these proofs of design, we are reminded of the words of the poet:—

> "Suppose that on awaking
> Some morning from repose,
> We saw the green earth studded o'er
> With every flower that blows:
>
> "Suppose until that moment
> We ne'er had seen a flower,—
> That one had never graced the earth,
> Even in Eden's bower:

"Say, should we ask these visitants
Their birth-place and their home;
If they had come to stay with us,
Or were again to roam?

"And should we gaze upon the rose,
In its rich variety,
And ask what hand had mingled thus
Its graduated dye?

"And who had given the luscious scent
Which from its ambush stole,
Spreading luxurious influence,
Like music, o'er the soul?

"We who had seen the stars career
Still in their nightly dance,
Should we look on these gems of earth,
And say they came by chance?

"No, in the lily's grandeur,
And in the rose's hue;
In the bright dahlia's gorgeousness,
In the violet's eye of blue;

"In the pencilling of the passion-flower,
In its deep mysterious sign—
All hearts would feel, all lips confess,
Their Maker is divine."

The Corn Catchfly grows on sandy fields, and has been found near Bury and Thetford, in Suffolk; at Dirleton, in Haddingtonshire; and near Sandown Castle, Kent. The latter place is interesting to the botanist at the season of its growth, because on this castle may be found the clove pink; and on the beach beside it, in some seasons, the sea-pea (*Láthyrus maríitimus*), with its rich clusters of flowers, trails among the shingle.

9. **Common or Lobel's Catchfly** (*S. arméria*).—Stem erect and viscid; petals notched, and crowned with awl-shaped scales; calyx club-shaped, and smooth; leaves broadly lance-shaped; panicles of flowers level topped. Plant annual. This is very well known as a garden flower, its handsome pink cluster expanding in July and August, and growing on a stem a foot or a foot and a half high. It is now extinct as a wild flower, but is retained in the list of the British Flora, from having been found on the banks of the Dee, and at Yalding, in Kent, by Dr. Richardson and Mr. Borrer, who considered it was naturalised on those spots. It grows wild in France, Germany, and Switzerland.

10. **Night-flowering Catchfly** (*S. noctiflóra*).—Stem erect, many times forked; calyx with long teeth, oblong when in fruit, 10-ribbed; leaves lance-shaped, lower ones tapering towards the base. Plant annual. This is, too, a night-scented species, opening its rather large and fragrant reddish-white or yellowish flowers at sunset, and closing them by day. It is not a common plant, though found on sandy and gravelly corn-fields in various parts of England and Scotland. It blossoms in July and August. The stem is about a foot in height, the upper part much branched, each branchlet having a single flower, and one also appearing in the axil of the branch. The flower-stalks are clammy.

4. Campion (*Lýchnis*).

1. **Ragged Robin, or Cuckoo-flower** (*L. flos-cucúli*). — Flowers loosely panicled; petals deeply 4-cleft, crowned; leaves very narrow. Plant perennial. All dwellers in the country like well to hear the cuckoo's voice; not that his monotonous tones have a melody like the notes of the thrush, for there is little real sweetness in the loud echo which they waken from the distant wood, now so full of the mirth and music of multitudes of singing birds. But when the cuckoo's notes are sounding over hill and dell, we know that summer is brightening the green earth. We hear that song while budding trees and blooming flowers are around us, and from earliest times, as our oldest English ballad proves, that voice has been welcomed. No

wonder, then, that in days when men thought not of scientific names for the flowers, ere as yet those affinities had been traced which enabled the botanist to arrange and name them—no wonder that the English peasant, or the old herbalist, or the resident of the monastery, gave to the flowers such simple English names as linked them with nature, and serve even yet to awaken pleasant memories.

It is interesting to trace in the old names of our flowers the old modes of thought and habits of life to which some of them point. The cuckoo was evidently a favourite bird, for many a pretty flower yet bears its name. There was the pungent cardamine of the fields and woods, which still has, as well as the anemone, the name of Cuckoo-flower. Then we have this bright and ragged Lychnis, while the Cuckoo-buds of the old poets are known to moderns as buttercups. There was the wood sorrel, which was called Cuckoo's-meat, because, as Gerarde said, it came at the time when the cuckoo might need it for food. There, too, is the Cuckoo-pint, which is still a rustic name for the arum, and which may have been so called because its half-folded vase-like leaf might hold some drop of dew or rain to refresh the early bird; or its name may be a corruption of Cuckoo-point, given because the purple or green column in the centre of its leaves was growing when the cuckoo was singing.

Many another bird or mammal of the country was linked, too, with the flowers in the names of these olden days. The Swallow-wort, fancied to benefit the youngling swallow, and Hawk-weed, deemed good for the vision of the birds of prey; and Sheep's Scabious, and Bird's Cherry, and Duck-weed, and Adder's-meat, and Cow-berry, and Cow-wheat, and Dog's Mercury, were, doubtless, all so named from their real or supposed uses. Many flowers, too, suggested, in some part of their structure, some animal feature; thus Stork's-bill, Crane's-bill, Pheasant's-eye, Hare's-ear, Mouse-tail, Hound's-tongue, Cat's-tail, Ox-eye, Ox-tongue, and Crow-foot, were so named from blossom, or leaf, or seed-vessel; while the entangling fibres of the root of one of the orchises suggested the name of Bird's-nest Orchis; and one of the velvety flowers of spring won for itself the name of Cowslip. Then there was an association with the times and seasons in the names Wake-robin, Day's-eye, Winter-weed, Maythorn, Lent-lily; St. John's-wort, of Midsummer-day, and St. Patrick's Cabbage, of St. Patrick's-day; and Evening Primrose, and Snow-drop, and Spring Cresses. The rustic list had its classic allusion in the name of the Grass of Parnassus; and its touches of sentiment in those of the Forget-me-not, Pansy, Heartsease, True-love, and True-love-knot; while the Wayfaring-tree, and Traveller's Joy, and the Queen of the Meadows, all remind us that those who so called them had an eye for the beauty of the landscape and its vegetation. Poor Man's Weather-glass, Shepherd's Needle, and Shepherd's Purse, all tell a tale of rural imaginations; while the old names of Fuller's Teasel, Fowler's Service, Dyer's Weed, Bed-straw, Flee-bane, Dyer's Rocket, Glass-wort, are still records of old uses of plants. The intercourse with foreign lands and the improvements in horti-culture have so well filled our kitchen-gardens with a provision for the tables, that Salad Burnet, Lamb's Lettuce, Sauce-alone, Hedge-mustard, Winter Cresses, Poor Man's Pepper, and Corn-salad, grow now ungathered, and we

1. RAGGED ROBIN
Lychnis flos-cuculi
2. RED GERMAN CATCHFLY
L. viscaria
3. RED ALPINE CATCHFLY
L. alpina
4. WHITE CAMPION
L. vespertina
5. RED CAMPION
L. diurna

Pl. 40.

only wonder, while thinking on their names, at the simple taste which enabled our fathers to relish such a vegetable diet.

A large number of plants were named for their healing virtues, and though the herbalist often overpraised his simples, yet a few of them deserved their repute. In some, however, whose praises filled the pages of the old writers on plants, we can find no powers to correspond with their alleged properties; and we can only think that fevers were allayed by the water in which the herbs were mingled, and wounds healed by time, rather than by the reputed remedies; so that we could join in the recommendation given by Sir Kenelm Digby for some of the plasters then in use, that they should be applied to the weapons rather than the wounds. If Carpenter's Herb, and Sickle Herb, and Scurvy-grass, and Toutsaine, and Wound-wort, Shepherd's Spikenard, Fever-few, Self-heal, Poor Man's Parmacetti, and Souldier's Milfoil, had some small degree of healing virtues, yet we should be sorry to trust our afflicted friends to the cures effected by Palsy-herb, or Whitlow-grass, or Lung-wort, or Liver-wort. These last names, indeed, remind us of the notion that plants indicated by some external sign the healing powers which they possessed, so that the spotted leaves of the Lung-wort showed that it was good for diseased lungs, and the lobed form of the Liver-wort leaf marked its uses to man; while, on the same principle, the spotted stem of the Viper's Bugloss indicated its power to remedy the bite of the reptile.

Some of the prettiest of our country names are derived from resemblances apparent to us all. Such are Sundew, Satin-flower, Allseed, Arrowhead, Awlwort, Pearlwort, Monkshood, Bladderwort, Golden Rod, Bee Orchis, and many another; and the appropriateness of some which we see in our every country walk gives us a feeling of pleasure as we think of them. The winding habit of our favourite woodland climber is well described by the name Woodbine, and its honey-bearing tubes by that of Honeysuckle; the names of Bitter-sweet and Deadly Nightshade are no less appropriate. The name Foxglove, which is but a corruption of Folks'-glove, or Fairies'-glove, has a thought of poetry in it; that of Speedwell was given by one who loved flowers, and that of Thrift by one who marked how, growing as it can on the scantiest soil, it resembled the virtue which made good use of small means. Gold-knobs, Gold-cups, Goldings, and King-nobs, were pretty names for the buttercups which clothe our meadows in such numbers and varieties, that old Culpepper says, "So abundant are the sorts of this herb, that to describe them all would tire the patience of Socrates himself; but because I have not yet attained to the spirits of Socrates," he adds, "I shall describe the most usual." Besides those which we have given, the herbalist describes as common names in his day, for these plants, Frogs-foot, Troil-flower, Polts, Locket Goulions, and Crowfoot, so that, as he says, "This furious biting herb hath obtained almost enough to make up a Welshman's pedigree, if he fetch no further than John of Gaunt, or William the Conqueror."

The Lily of the Valley, the Mountain Ash, Heath, Meadow Rue, Corn Marigold, Marsh Trefoil, Brook-lime, Pond-weed, Water Avens, Alpine Gentian, Wood Anemone, Water-wort, Wall-flower, Tower Mustard, Seaside

Poppy, Shore-weed, and Saltwort, are all appropriate and expressive names, and serve to indicate the spots on which we may find the plants growing.

Many of our common wild flowers received their names as expressive of the pious feelings of our ancestors. In these days, Revelation has come to almost every home of our land, teaching us no longer to adore fallible men, but to trust our sins and sorrows to Him who alone could atone, who alone can mediate. But in former days men mingled up strangely and darkly the intercessions of the saints and the Saviour; and the names of the flowers prove at least the religious thought which possessed the mind of him who so called them. The mother of our Lord, she who to latest days must be loved and honoured as "blessed among women," shared then, in the fond idolatry of human hearts, in a reverence accorded to holy men of old, or to others of whom we know nothing, save such legends as were traced by the hand of superstition. Wherever we find the word Mary or Lady in any way connected with the flower, we may generally infer that the latter is but the remains of "Our Lady," and that both refer to the Virgin. Nor was it the flower alone which received this associating name; the little insect which the merry child bids "fly away home," the Lady-bird, *La vache de la Vierge* of the French, was named, too, after "Our Lady." Lady's Tresses, Lady's Mantle, Lady's Slipper, Marygold, and Rosemary, Herb Bennet, Herb Robert, St. Peter's and St. James's-wort, Sweet Cicely, Sweet Basil, are but a few of the names which probably originated from the monastery; and ancient associations are recorded in the names of Holy Herb, Holy Oak, Star of Bethlehem, Procession-flower, Herb of Grace, Trinity Herb, and many others; while a remembrance of old superstitions lurks in such names as that of Enchanter's Nightshade.

But our Meadow Lychnis, our Cuckoo-flower, has been long forgotten in the remarks which its name suggested. It is a very pretty flower, often sprinkling the grass far over the moist meadows with its rose-coloured jagged petals, which grow on a reddish-coloured stem, two or three feet high, during June and July. The lower part of the stem is hairy, and the upper part clammy. It is often, in country places, called Ragged Robin, or Bachelor's Buttons, a kind of button having been formerly worn which was made of pieces of cloth cut somewhat in the form of its petals.

2. **Red German Catchfly** (*L. viscária*).—Petals slightly notched at the extremity; stem clammy at the joints; leaves lance-shaped and pointed. Plant perennial. This plant, which grows on dry Alpine rocks, is found on Craig Breiddin, Montgomeryshire, and in the neighbourhood of Edinburgh, and some other parts of Scotland. Its flowers are large, and grow in a panicle, on a stem about a foot in height. They are of a bright rose-colour, and the flowers appear in June.

3. **Red Alpine Catchfly** (*L. alpína*).—Petals cleft; flowers growing in a corymbose head. This is a rare plant—so rare, indeed, that only three places of its growth in this kingdom have been recorded by botanists. One is on the summit of Little Kilrannoch, between Glen Prosen and Glen Callater; another is Hobcaster Fell, Cumberland; and the third in Lancashire.

4. **White Campion** (*L. vespertína*).—Flowers having usually the pistils and stamens on separate plants; petals 2-cleft and crowned; capsule with

erect teeth; leaves oblong and tapering; stem and leaves downy. Plant perennial. This flower, which was regarded by Linnæus as a variety of the following species, is very common on hedge-banks, in grass meadows, and corn-fields, from June to September; its substantial stem rising sometimes to the height of two feet, and the large flower of pure white overtopping the ripening corn or the tall flowering grass. Its specific name is given because it is a vesper flower; for though it is open all day, it breathes no sweet incense till the evening dews are on its petals. Sometimes the flower is delicately tinged with red, and its stems, which are viscid at the joint, are often of a brownish hue.

5. **Red Campion** (*L. diúrna*).—Flowers having usually the pistils and stamens on separate plants; capsule nearly globose, the teeth recurved; leaves broadly oblong, tapering, downy as well as the stem. Plant perennial. This Red Campion is rarely seen in the corn-field; its most frequent places of growth being the moist hedge-bank or the wood where water is standing. In some damp, shady places the plant attains a great height, and is very abundant. The author has seen a wood of this description, which lay in a valley, filled during June and July with these plants, in so luxuriant a condition, the stems a yard high, and the flowers so large, and of so deep a red, that the traveller paused, in coming down the hill-side, to look at the rosy hue of the landscape before him. The blossoms grow in a loose panicle, varying in tint from a deep rose-red to pale pink or white; and the ordinary height of the stem is from one to two feet. Many beautiful species of *Lychnis* are cultivated by our gardeners. The White and Red Campions are attractive flowers; while few plants make more show than the Scarlet Lychnis, which country people so commonly call Scarlet Lightning, and which our forefathers termed Cross of Jerusalem. It is the *L. chalcedonica* of the botanist, and is a native of Russia, but is much improved by culture. The Italians call it *Croce de Cavalière.*

5. Cockle (*Agrostémma*).

Corn-cockle (*A. githágo*).—Calyx ribbed, much longer than the corolla; petals undivided, destitute of a crown; leaves narrow. Plant perennial.

It is sweet to wander, during the various seasons, at early morning, through the quiet pathway, and to look at those

> "Gorgeous flow'rets in the sunlight shining,
> Blossoms flaunting in the eye of day,
> Tremulous leaves with soft and silver lining,
> Buds that open only to decay.
>
> "Everywhere about us they are glowing,
> Some like stars, to tell us spring is gone;
> Others, their blue eyes with tears o'erflowing,
> Stand like Ruth amid the golden corn:
>
> "Not alone in Spring's armorial bearing,
> And in Summer's green emblazon'd field;
> But on arms of brave old Autumn's wearing,
> In the centre of his brazen shield."

This showy Cockle unfolds its rich purple blossom at the period when the corn-fields are looking very beautiful, when the nodding grain is daily becoming more golden in hue, as the sunshine of July is ripening it for the sickle.

Our beautiful Corn-cockle is too conspicuous a flower to escape notice, and well deserves its name of Crown of the Field, though this was at first applied to the German species of our gardens, *A. coronaria*. Ready as the lover of flowers is to admire the Corn-cockle, it cannot be pleasing to the agriculturist, who well knows that its seeds, which contain the noxious principle of saponine, may greatly injure his corn, and fill his flour with black specks. The capsule, when ripened, is full of large, black, glossy seeds, from which the plant obtained its specific name; the black aromatic seeds of some plant known to the Romans having been called *Git*, or *Gith*. *Gith* is an old Celtic word, and the word *Cath* is said by Sir William Hooker to signify a seed of corn in modern Gaelic. The French call this flower *La Nielle;* the Germans, *Der Raden*. It is the *Koornvlam* of the Dutch farmer, and the *Agrostemma* of the Portuguese.

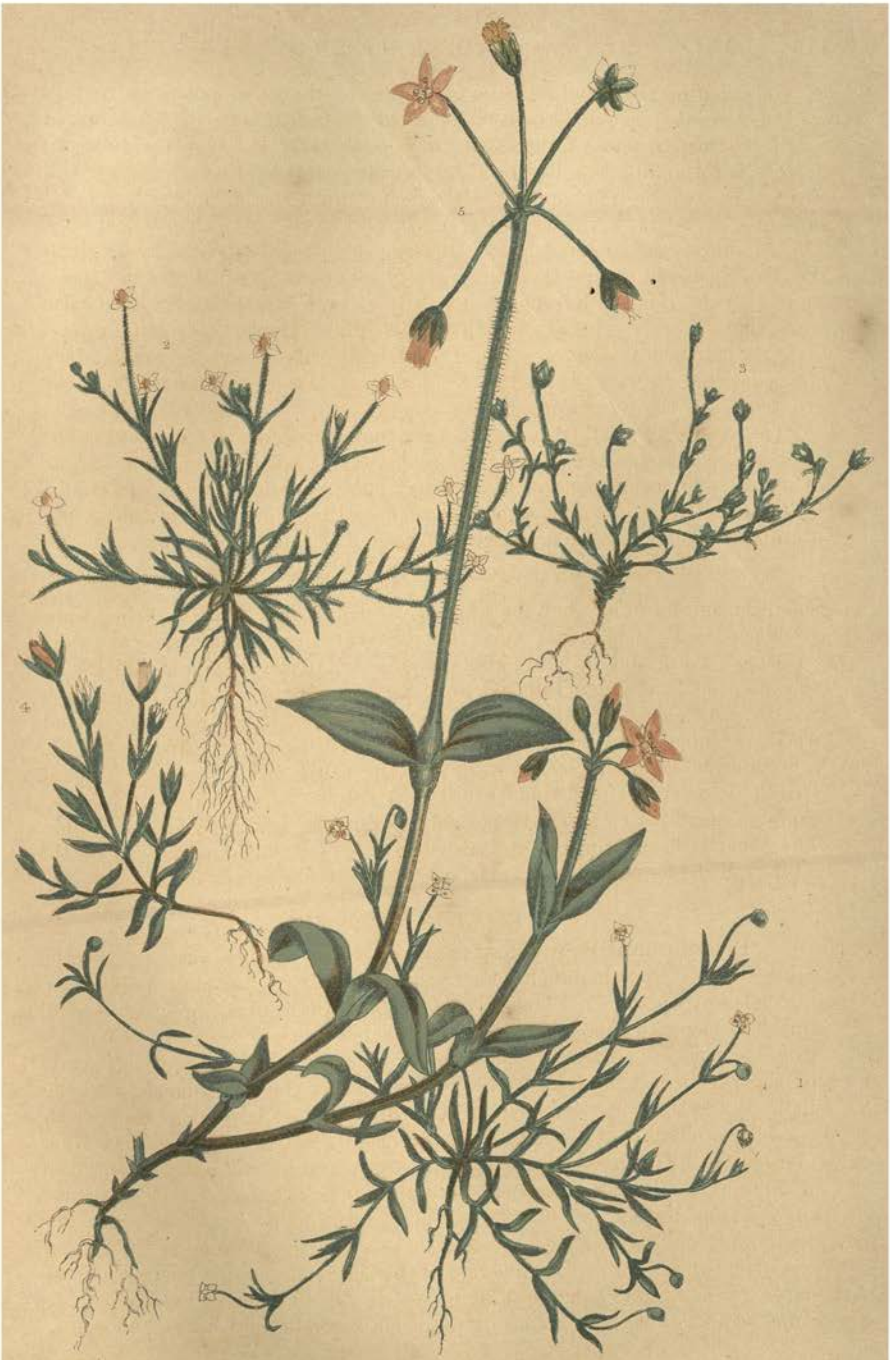
The reader of Scripture, as he sees these purple flowers amongst the corn, is reminded of the denunciation of Job, "Let thistles grow instead of wheat, and Cockle instead of barley;" but the word rendered "Cockle" by our translators does not appear to refer to this plant. From one of our old nursery songs, in which a neglected garden is said to be

"Full of weeds and Cockle seeds,"

we are inclined to infer that the English word "Cockle" had in earlier times a wider meaning than it has now. But whether our translators, by the word "Cockle," did or did not intend this species of plant, it is now well known that Job could not have referred to it, as it is not a weed of Palestine or Arabia. All recent writers agree that some useless, if not noxious, common weed was intended by the Patriarch; and many have suggested that it was a bramble or other thorny plant, or that the word meant weeds in general. Dr. Royle infers as probable, that it is a species of nightshade (*Solanum*), common in cultivated grounds, not only in Europe, but in Syria and Arabia. The same Hebrew word is in Isaiah rendered by "wild grape"; and the Arabs call the nightshade by a name signifying wolf's-grape or ox's-grape.

6. Pearlwort (*Sagina*).

1. **Procumbent Pearlwort** (*S. procúmbens*).—Stems prostrate, smooth; leaves pointed; petals much shorter than the calyx; capsule curved downwards before ripening. Plant perennial. This little plant, growing in small tufts, is among the most minute of our wild flowers. When we look at its tiny blossoms, and contrast them in imagination with some of the giants of the Vegetable Kingdom, we can but wonder at the remembrance, that the little Pearlwort is as perfect in its structure as those large flowers of which travellers tell us. We read of the Monster Cactus, which reached Kew Gardens in 1846, and required eight strong mules to draw it over the mountains of Mexico, and ten men to place it in the scales at the gardens; of other species, thirty or forty feet high, forming a *chevaux de frise* to the plantation, and covered with rose-like flowers; of the blossoms of *Aristolóchia cordifolia*, which Baron Humboldt saw the children place on their heads for caps; of the *Victoria regia*, with its leaves six feet in diameter; of the strange *Rafflesia arnoldi*, whose immense flowers measured a yard across, and whose



1. PROCUMBENT PEARL-WORT.
   Sagina procumbens.
2. ANNUAL PEARL-WORT.
   S. apetala.
3. SEA PEARL-WORT.
   S. maritima.
4. UPRIGHT MŒNCHIA.
   Mœnchia erecta.
5. UMBELLIFEROUS JAGGED CHICKWEED.
   Holosteum umbellatum.

Pl. 41.

nectarium would hold twelve pints of water; of the *Barbacenia*, which the Chevalier Schomburgk describes as having flowers six inches long, on a stem twelve feet high; of the immense *Fourcroya*, of the aloe family, which Karwinski found on the mountains of Mexico, whose tufts of leaves, six feet long, produced innumerable large white flowers, and rose to nearly ninety feet in height; and of various other plants renowned for their immense size. Many a specimen of the Pearlwort might be covered—stem, leaves, and flowers—with a florin, yet the tiny blossoms have their stamens and their pistils, and produce in abundance their little seeds. The hand of God has formed them with as much skill as the larger blossoms, and His work is as discernible in the smallest as in the greatest.

This little Pearlwort is not a favourite with the gardener; for it possesses itself too readily of his gravel paths, dispersing itself by its innumerable seeds, and taking root very easily, wherever it can find a suitable soil. The gravelly heath, the crevices of the stone wall, and other waste places, are its common haunts; and it may be found among the short grass of the pasture, or alpine hill, or lowly valley. The central stem is erect and flowerless; but the stems which arise from this spread over the ground, being from two to four inches long; often sending out roots from different parts, at the insertion of the leaves, and new plants arising from these. The little green blossoms are to be seen all the summer, growing singly at the end of the stalks, or placed in the angles formed by the stalks and leaves. The leaves, which are awl-shaped, are scarcely thicker than a packthread, and have membranaceous margins at the base.

2. **Annual Small-flowered Pearlwort** (*S. apétala*).—Stems slightly hairy, erect, or ascending; leaves awned and fringed; sepals 4. This little Pearlwort is much like the last species, but smaller and more slender in all its parts; its stems too are erect and slightly hairy, and the fringed leaves afford a characteristic feature, while its petals, being usually present, distinguish it from the next species. It grows on dry walls and gravelly places, flowering from May to September. Curtis says that it ripens its seed much more rapidly than any other English plant.

3. **Sea Pearlwort** (*S. marítima*).—Stems erect, or procumbent only at the base; leaves fleshy, obtuse, or with a short point; petals none. Plant annual. This species is not uncommon at the sea-coast, or on land occasionally overflowed. It is generally of a reddish or purplish hue; but many writers think that its difference from the preceding species is simply referable to the place of its growth. Old writers called the Pearlworts, Chickweed Breakstone; the French term the plant, *La Sagine;* the Germans, *Der Vierling;* and the Dutch, *Vetmuur.* Hooker regards this as a sub-species of *S. apetala.*

7. Mœnchia.

Upright Mœnchia (*M. erécta*).—Sepals 4, large, pointed, and with a white membranaceous edge. Plant annual. This Mœnchia in not uncommon; it blossoms during May and June, on some of our pastures which have a gravelly soil, and may be easily distinguished from any other of our wild plants. Its stem is from two to four inches in height; its white flowers are large in proportion to the rest of the plant, and open only in the sunshine.

8. Jagged Chickweed (*Holósteum*).

Umbelliferous Jagged Chickweed (*H. umbellátum*). — Stems smooth below, and hairy above; leaves oblong and acute; flower-stalks turning downwards after flowering. Plant annual. This is a singular and interesting little plant, very rare in this country, found only on very old walls about Norwich and Bury. Its stems are about four or five inches high, leafy, and viscid between the joints. The flowers are about four or five in each umbel; and the petals are white with a reddish tinge. It blossoms in April. The French call the plant *Holosté;* the Germans, *Spurre;* and the Dutch, *Zorghzaad.*

9. Spurrey (*Spérgula*).

1. **Corn Spurrey** (*S. arvénsis*).—Leaves slender, cylindrical, and awl-shaped, in whorls around the stem, with minute chaffy stipules at the base; flowers in panicles; flower-stalks bent down when in fruit. Plant annual. This Spurrey, which is common on gravelly and sandy soils throughout Europe, is from six to twelve inches high, and when luxuriant is sometimes more abundant in the cultivated field than the farmer desires. Its white flowers may be seen throughout the summer, and its stalks and flower-cups have usually a reddish tinge. The leaves, which are scarcely thicker than a coarse thread, are about an inch in length. The French call this plant *La Spergule;* the Germans, *Der Ackerspargel;* the Dutch, *Akker-spurri.* It is the *Spergola* of the Italian; and the Danish name of *Knaegraes* is not inappropriate, as the stalks bend at the joints in a sort of angular manner, difficult to describe, but giving a peculiar character to the Spurrey. Our country people have various names for the plant, as Sandweed, Yarr, and Pick-pocket.

Although the Spurrey is a troublesome weed in the corn-field, where its numerous seeds render it often abundant, yet it is a plant to be prized on the pasture land, as cattle eat it with much avidity, and it is highly nutritious. The farmers cultivate it in Holland on meadows destined to afford pasture for their cows; and it is also sown in the Netherlands among the stubble of the field from which the corn has been gathered in, in order that it may afford winter food for the sheep. It is remarkably rapid in its growth, for it may be sown and reaped in the course of eight weeks, either in autumn or spring; and the sheep are much improved by feeding upon it. It is also a favourite and valuable food for poultry. Von Thaer remarked of it, that it is the most nourishing, in proportion to its bulk, of all forage, and gives the best flavoured milk and butter. Its culture has been recommended to the English agriculturist; but it is thought that the expense would exceed the remuneration of the crop, and, as Professor Martyn remarks, we have many plants better adapted to our poorest soils. The Spurrey grows wild in many parts of North America, and is very abundant in the neighbourhood of Quebec. It seems universal throughout Europe; and in Finland and Norway bread is made of its seeds during seasons of scarcity. The small flowers are very sensitive under atmospheric changes; and Dr. George Johnston remarks, "We have seen a whole field, whitened with its blossoms,

1 CORN SPURREY.
Spergula arvensis.

2 KNOTTED SPURREY.
S. nodosa.

3 PEARL WORT SPURREY.
S. saginoides.

4 AWL-SHAPED SPURREY.
S. subulata.

Pl. 42.

have its appearance quite changed by the petals closing on a black cloud passing over and discharging a few drops of rain."

2. **Knotted Spurrey** (*S. nodósa*).—Leaves opposite, growing together at the base, upper ones very short, growing in knots, and having tufts of young leaves in the axils; petals much larger than the calyx; flower-stalks always erect. Plant perennial. As the Rev. C. A. Johns has remarked, in his "Flowers of the Field," this species may be known by its tufted leaves, which distinguish it from any other British plant. Its flowers are very pretty, and showy for its size; they grow two or three together, on a stem about three or four inches high, and appear in August and September. The plant is not unfrequent on wet sandy fields and marshy places. The central stem is shorter than the lateral ones, and bears no flowers. Some writers consider this and the two following species as pearlworts, and place them in the genus *Sagina*.

3. **Pearlwort Spurrey** (*S. saginoides*).—Leaves opposite, awl-shaped, and tipped with spines; flower-stalks solitary, very long, and smooth; petals shorter than the calyx. Plant perennial. This is a very small plant, not uncommon on the Highland mountains; bearing drooping white flowers in June and August. Also known as *Sagina linnæi*.

4. **Smooth Awl-shaped Spurrey** (*S. subulata*).—Leaves opposite, awl-shaped, crowned, and slightly fringed; flower-stalks solitary and very long; petals rather longer than the calyx. Plant perennial. This plant, which is very similar in appearance to the procumbent pearlwort, is common on gravelly pastures; its white flowers appearing in June and July.

10. Stitchwort (*Stellaria*).

1. **Chickweed** (*S. media*).—Leaves egg-shaped, with a short point; stems with a hairy line alternating from side to side; petals deeply 2-cleft, not longer than the sepals; stamens 5—10. Plant annual. Everybody knows this common little plant. Our fathers called it also Hen's Inheritance; its numerous seeds and young tops affording a good supply of food, not alone to the poultry which may stray over the grass lands, but also to those singing-birds which God has sent to gladden the heart of man, and to fill the wild wood with songs of joy.

The Chickweed grows everywhere on rich cultivated land. Now we find it springing up in the garden, after a spring rain, making the beds green with its young shoots, and even in winter having the light tint of the spring leaf. In the fields it calls for the weeder's care; and under the hedge-bank its white flowers bloom all the year long, save when the snows have covered every green thing. It is a very valuable plant to birds; nor is it one of the worst of those herbs which men have sometimes boiled for their food. We need hardly describe its small flower, for it may mostly be seen, like a little star among its leaves, when the sun is shining. Although the flowers are produced all the year round, in winter they do not open, but they manage, nevertheless, by self-fertilization to perfect an abundance of seed, so that they are sowing it from one end of the year to the other. Many of the flowers are without petals, or have them greatly reduced in size. Forecasts of weather drawn from their open or closed condition are most illusory.

We, in modern days, find no great remedial virtues in this herb, but our forefathers recorded it as an effectual remedy against cramps, convulsions, palsy, and various maladies. "Boil a handful of Chickweed," says one old herbalist, "and a handful of red-rose leaves dried, in a quart of muscadine, until a fourth part be consumed:" oil of sheep's feet was to be added, and the "grieved place" anointed therewith. One can imagine from the nature of some of the ingredients, that the sufferer might find relief from pain by this application, but it was not completed without binding some of the Chickweed over the part affected, which if done would, as the director adds, "with God's blessing, cure the malady in three times the dressing."

2. **Greater Stitchwort, Satin-flower,** or **Adder's Meat** (*S. holóstea*). —Stem nearly erect, with four distinct angles, rough edged; leaves very narrow, tapering to a long point, delicately fringed; petals twice as long as the calyx, and cleft to the middle; calyx without nerves. Plant perennial. There is beauty on the earth in every season of the year, in some part or other of the landscape. The leafless woods of winter, with their crimson berries lingering yet, and their boughs sparkling with the frost, and beautiful in their varied outline and their emerald mosses, which half disclose some crimson or orange fungus,—have their beauties to offer to the wanderer there. The golden corn-field, with the bearded grain, doing obeisance to the passing wind, and reminding us of the wind-swept ocean, has its chief loveliness of flowers in the autumn, when the crimson poppy, the yellow charlock, the corn-cockles, and the blue starry succory and lilac scabious contrast with the corn. The heath-land has its glory in summer-time, when it is rich in its fragrant furze and broom, and branching ling, and purple and rose-coloured heather flowers, and nodding blue-bells; and when the linnet is yet singing among the furze tops, and the goldfinch comes thither to pick the thistle-down, and the bee and butterfly are there in search of nectar. May and June are the months in which the meadows are most lovely, when the tall grass waves gracefully by the gold cups, and when thousands of silvery daisies glitter beside the blue speedwells, while the scented honeysuckles and brier-roses are unfolding. May is the loveliest season for the woodlands; which are, however, more or less lovely in every changing season. We lose some of the graceful forms of the boughs as they may be seen in full outline in winter, for green leaves are thickening fast upon them, nor is the green tint, though gay, so deep and varied as are the hues of July, or the autumnal touches of the brown October. Here and there some dark-green holly or darker yew contrasts with it, or a gleam of sunshine gives some bough a deeper yellow; yet now, elm and oak, and birch and hawthorn, have almost all the same pale and delicate verdure which tells of youth and spring. It is now that the flowers of the wood are in fullest perfection; and should our footsteps traverse those paths three months later, though fields and meadows are still rich and gay, yet the flowers of the wood will be comparatively few. The golden-rod may be there, and the magnificent foxglove, but all the wealth of anemones, and primroses, and violets, and hyacinths, and orchises, will have long since passed away. It is when these flowers are all in perfection that we see the delicate white blossoms of the Stitchwort gleaming among them, too large

1. WOOD STITCHWORT. *Stellaria nemorum*
2. COMMON CHICKWEED. *S. media*
3. GREATER STITCHWORT. *S. holostea*
4. MARSH STITCHWORT. *S. glauca*
5. LESSER STITCHWORT. *S. graminea*
6. BOG STITCHWORT. *S. uliginosa*

Pl. 43.

to be unnoticed, and too beautiful in their pearly petals and golden anthers to escape our admiration. No spring flower seems to our eyes more lovely than this; and it is a common flower too, growing among the grass of the hedge-bank, on a stem a foot high, and clad with delicate green leaves, and seeming all the whiter from its contrast with the deep-blue hyacinth. Yet strange it is that few save botanists know its name, nor have many poets sung its praises, though none in forming a wild nosegay would fail to gather it.

It has not, however, been left quite unsung, for Calder Campbell has named it among the flowers of spring:—

"The buds are green on the linden-tree,
And flowers are bursting on the lea;
There is the daisy, so prim and white,
With its golden eye and its fringes bright;
And here is the golden buttercup,
Like a miser's chest with the gold heap'd up;
And the Stitchwort, with its pearly star,
Seen on the hedgebank from afar."

This Stitchwort is about a foot or a foot and a half high, its stem and foliage somewhat glaucous, and very rigid and brittle. Indeed, so brittle is it, that it is impossible to pull up the plant by the root; and we can remember in childhood regarding it as a wonderful plant, growing without any root, as it breaks off just above the earth, and we could never by our simple implements bring a fibre to view. The French call it *Langue d'oiseau;* the Germans, *Das Augentrost-gras;* and it is the *Oogentroost-gras* of the Dutch. Our fathers called it All-bones, probably with a jocose reference to its brittleness. It has a great number of capsules, which separate by valves, and scatter its profusion of seeds. These seed-vessels droop when the flower is over.

3. **Lesser Stitchwort** (*S. graminea*).—Stem nearly erect, angular, smooth; leaves very narrow, acute, smooth, fringed; flowers in forked panicles; corolla scarcely longer than the calyx; sepals 3-nerved. Plant perennial. This species, which is in blossom during June and July, is neither so frequent nor so ornamental as our spring favourite, though it is not uncommon on dry pastures, heaths, and sunny banks. The stem is more slender than that of the preceding, and about a foot in height; but the much smaller white blossoms, with petals cleft so deeply as to make it more star-like, and less cup-like in form, at once distinguish it: the nerves of the calyx, too, are of a specific character. The anthers are red. A variety of this plant is sometimes described as a distinct species, and called the Many-stalked Stitchwort, *S. scapigera.* It is distinguished by its long footstalks, and has been recorded from the north of Dunkeld, and about Loch Nevis; but it is really a cultivated form.

4. **Glaucous Marsh Stitchwort** (*S. glauca*).—Stem angular, nearly erect, without hairs, and glaucous; leaves narrow, tapering, entire, and glaucous; flowers solitary, on long footstalks. Plant perennial. This species is readily known by its very narrow and glaucous leaves, and by the circumstance of its flowers growing singly, instead of several being placed together. Its blossoms are to be seen from May to July, and are, next to those of the Satin-flower, the largest of the genus. It, however, in its general aspect,

more resembles the Lesser Stitchwort than either of the others, and like that species, its blossom is deeply cleft; but the moist marshy land, and not the dry open down, is the place on which we must look for it. The stem is about a foot or a foot and a half high.

5. **Bog Stitchwort** (*S. uliginósa*).—Stems spreading, angular; leaves smooth, broadly lanceolate, with a rigid tip; flowers panicled; petals deeply 2-cleft, shorter than the 3-nerved sepals, which are united at the base. Plant annual. Those who are wont to roam among the coarse mosses which grow on our moist lands, probably often see this little Stitchwort, for it rejoices in the soil of such spots, as well as in the sides of ditches and rivulets, and is very common. Its white flowers are so small that one would hardly notice them among the broad leaves. They expand in June. The stems are about a foot long.

6. **Wood Stitchwort** (*S. némorum*).—Lower leaves stalked, and heart-shaped; upper ones egg-shaped, and sessile; panicle of flowers forked. Plant perennial. This rare species of *Stellaria* is found chiefly in the north of England, or in the lowlands of Scotland. It is easily distinguished from the others by the large heart-shaped lower leaves, which are sprinkled with little raised dots, that render the surface rough. The stems are weak, and about a foot or a foot and a half long, downy at the upper part, but often smooth below. The flowers appear in May and June, and the petals are white, deeply cleft, and twice as long as the sepals.

11. Sea Purslane (*Honckenýa*).

Ovate-leaved Sea Purslane (*H. peplóides*). — Leaves sessile, egg-shaped, acute, smooth, fleshy; sepals obtuse, with white margins; stems very fleshy, decumbent at the base; calyx without ribs. Plant perennial. This plant, which is often called Sea-side Sandwort, and placed in the genus *Arenaria*, is frequently very puzzling to the unpractised botanist. It is very unlike the sandworts in general, and is so stout and succulent that it would rather remind us of the stonecrop family. It is very peculiar, and we know of no British plant which has its leaves more distinctly decussate. Leaves are said to be decussate when they cross each other at right angles; and although, when older, this arrangement is not so distinct, yet the young shoots show very plainly the four distinct rows in which they were crowded. This Sea Purslane grows in tangled clumps on the sand, spreading its stems over the ground, the rich glossy green leaves having none of the glaucous tint of most other sea-side plants. One rarely sees its flowers; they appear in June, and are small and white, but they never expand in cloudy weather, or long after noonday. The roundish capsules contain a few seeds, which are large in proportion to the size of the plant, and when matured are quite black. The author has occasionally found them as large as a pea. This flower is often called the Sea Pimpernel; it is confined to the sand or shingle, or the salt-marsh, never growing in inland districts. It is very common on the shores of Iceland, and is there prepared for food by being fermented.

1. SEA PURSLANE.
Honkenya peploides.

2. VERNAL SANDWORT.
Arenaria verna.

3. ALPINE SANDWORT.
A. rubella.

4. FINE LEAVED SANDWORT.
A. tenuifolia.

5. LEVEL TOPPED SANDWORT.
A. fastigiata.

6. FRINGED SANDWORT.
A. ciliata.

7. THYME LEAVED SANDWORT.
A. serpyllifolia.

8. THREE NERVED SANDWORT.
A. trinervia.

9. PURPLE SANDWORT.
A. rubra.

10. SEA SAND WORT.
A. marina.

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12. SANDWORT (*Arenária*).

* *Leaves* without *stipules*.

1. **Three-nerved Sandwort** (*A. trinérvia*). —Leaves sessile, egg-shaped, acute, the lower ones stalked, 3—5-nerved, fringed; flowers solitary, from the forks of the stem and axils; sepals 3-nerved, the central nerve rough. Plant annual. This is a little plant of shady woods and moist places, having much-branched downy stems, about a foot in height, and its upper leaves being without stalks. Anyone little used to plants would mistake it for the common chickweed, but its white petals are not cleft like those of that flower. The blossoms are small, appearing in May and June. The Sandworts are a difficult tribe of plants to the unpractised botanist, but if this species is examined when in seed, it may be seen by a common lens, such as is used by naturalists, to possess a peculiar character, in having a little appendage to the scar of the seed. This plant delights in damp hedge-banks.

2. **Thyme-leaved Sandwort** (*A. serpyllifólia*).—Leaves broadly egg-shaped, pointed, somewhat rough, sessile; calyx hairy, about as long as the corolla; stem repeatedly forked. Plant annual. This, like many of the Sandworts, is a native of the driest places, flourishing on open sandy banks, the tops of walls, and the sea-cliffs. Mr. Johns remarks, that when growing near the shore, the stems become less branched, and the leaves somewhat larger and more decidedly fringed than in its ordinary state. It flowers from June to August, but its white blossoms are small, and its shrubby stems and foliage rarely exceed five or six inches in height. A slender straggling form is known as *A. leptoclados*.

3. **Vernal Sandwort** (*A. vérna*).—Stems numerous, panicled; leaves awl-shaped, 3-nerved when dry; petals somewhat longer than the narrow-pointed 3-nerved sepals. Plant perennial. This Sandwort is found on fragments of quartz, on the mountains in the north of England and Wales, at the Lizard Point, Cornwall, as well as about Edinburgh, and on some Scottish mountains. It is very pretty; its white flowers, which appear in May and June, being large for the size of the plant. The stems are slightly hairy, and three or four inches high. The plant grows in tufts among the grass, or on the almost bare rock.

4. **Alpine Sandwort** (*A. rubélla.*) — Stems numerous; flower-stalks downy, terminal, and usually bearing but one flower; leaves slender and awl-shaped, 3-nerved, blunt; petals shorter than the 3-nerved calyx. This rare plant, which is nearly allied to the last species, seems to be almost peculiar to the summits of the Breadalbane range of mountains in the Highlands of Scotland.

This lowly alpine flower has also been found on Ben Hope, in Sutherland, flowering in July and August. Sir William Hooker and Dr. Arnott remark of it: "This is quite an alpine or arctic plant; it loves to grow with its root buried under a loose piece of rock, and late in the summer often acquires a reddish tinge."

5. **Bog Sandwort** (*A. uliginósa*).—Stems prostrate at the base, with from one to three flowers, on long slender stalks; leaves awl-shaped, without nerves, and somewhat blunt; petals about as long as the calyx. Plant

perennial. This rare species, which blossoms in June, grows in tufts near Teesdale, Durham, on the banks of the stream. The whole plant is without down or hairs.

6. **Fine-leaved Sandwort** (*A. tenuifólia*).—Stems very slender, much branched and forked; leaves narrow, and awl-shaped, 3-nerved; calyx about twice as long as the petals. This is a small plant, its stems not more than five or six inches high, and scarcely thicker than a sewing-thread. It grows in sandy fields in several counties of England, bearing its minute white flowers in June and July. It has been said to occur in some parts of Scotland, but this is doubtful. Like many other of its species, it is a true Sandwort, and found only on sandy lands. The French call the Sandwort *La Sablonnière*, the Germans *Das Sandkraut*, and the Dutch *Zandmuur*; while the Italians, Spanish, and Portuguese call it *Arenaria*.

7. **Level-topped Sandwort** (*A. fastigiáta*).—Stems erect; leaves in tufts, awl-shaped, pointed with minute bristles; flowers in dense tufts; petals shorter than the calyx; sepals narrow, and pointed, white, with two green ribs. Plant annual. This species was at one time believed to have occurred on some of the Scottish mountains, but this was an error. Sir J. E. Smith remarks that its seeds are beautifully toothed like a wheel, each on a long slender stalk. It flowers in June.

8. **Norwegian Sandwort** (*A. norvégica*).—Leaves oblong, tapering towards the base, fleshy and smooth; sepals egg-shaped, acute, with 3—5 obscure ribs. Plant perennial. This species was discovered in the Shetland Isles, by Mr. T. Edmonston, in 1837; and in 1838 Mr. Peach, while travelling with Sir R. Murchison in Unst, the most northerly isle in Britain, found two or three specimens of this rare plant. Its stems are branched, and spread over the ground, and the branchlets are from one to three-flowered. It blossoms in July and August, and is by some regarded as a sub-species of—

9. **Fringed Sandwort** (*A. ciliáta*).—Leaves tapering towards the base, roughish, fringed with small hairs; corolla twice as long as the calyx; sepals lanceolate and acute, with 3—5 prominent ribs. Plant perennial. This small Sandwort is peculiar to the limestone mountains of Sligo, in Ireland. It is downy, and flowers from June to August.

* * *Leaves furnished with stipules.*

10. **Purple Sandwort** (*A. rúbra*).—Leaves linear, fleshy, pointed with a minute bristle; stipules chaffy; stem prostrate; seeds rough. Plant annual. This little Sandwort is very frequent on the ridges of sandy or gravelly fields, having a number of pretty little purple or pale lilac flowers in the axils of its upper leaves, from June to September. It is much branched, and very easily distinguished from all but the next species, by the egg-shaped stipules, which consist of a pair of thin, white, chaffy scales, united at their base. It is very similar to the sea-side species, but altogether smaller, and less succulent. Many writers believe it to be the same plant, only altered by the condition of the soil on which it grows.

11. **Sea-side Sandwort** (*A. marína*).—Stems prostrate; leaves semi-cylindrical, without points; stipules white, chaffy, and cleft; seeds smooth, flattened, the seed-vessel usually longer than the calyx. Perennial. Few

sea-side plants are more generally to be found about our shores than this. Sometimes it hangs its branches down from a rocky crevice, giving a verdure to the cliff, though, as we look up to its clumps, we cannot perceive the small purple stars which are seated among its foliage. Sometimes our plant grows among the timber lying in the boat-yard, near the sea, or hangs in clumps from between the stones of the harbour, on some high wall never washed by the water; but the spot on which this Sandwort attains its greatest luxuriance is the salt-marsh, where, from June to September, it may be seen amid the pale green stems of the sea-wormwood, and the deeper-tinted rosy tufts of the thrift, its thousands of starry flowers, as large as silver pennies, by their multitude giving a distinct hue to patches of the soil. These blossoms vary from deep purple to delicate lilac, or white. A little later in the year, the numerous seed-vessels are crushed by every footstep, as we wander over the dreary, treeless, and almost flowerless marsh, when the wind sweeps through the sea-reeds its melancholy accompaniment to the dashing waves. The flowers of the Sea Sandwort, however, can be seen spangling the grass only in the early part of the summer's day, for by four o'clock each blossom is closed up from the dews which twilight brings; by nine o'clock the next morning, they will be all open again in their full loveliness, reminding us of the pretty fancy of Linnæus, who constructed a dial of such flowers as were constant in their habits of opening and closing at certain hours. Charlotte Smith has a beautiful little poem on such blossoms.

"In every copse and shelter'd dell,
Unveil'd to the observant eye,
Are faithful monitors which tell
How pass the hours and seasons by.

"The green-robed children of the spring
Will mark the period as they pass,
Mingle with leaves Time's feather'd wing,
And bind with flowers his silent glass.

"See Hieracium's various tribe
Of plumy seed and radiate flowers;
The course of time their blooms describe,
And wake or sleep appointed hours.

"Broad o'er its imbricated cup
The goatsbeard spreads its golden rays,
But shuts its cautious petals up,
Retreating from the noontide blaze.

"Among the loose and arid sands
The humble Arenaria creeps;
Slowly the purple star expands,
But soon within its calyx sleeps.

"Thus in each flower and simple bell
That in our path untrodden lie,
Are mute remembrancers which tell
How fast the winged minutes fly.

"Time will steal on with ceaseless pace,
Yet lose we not the fleeting hours,
Who still their fairy footsteps trace,
As light they dance among the flowers."

The Purple and Sea-side Sandworts are, by some botanists, placed in a distinct genus, called *Spergularia*, from the resemblance to the Spurrey (*Spergula*); this species being distinguished as *Spergularia media*.

13. Mouse-ear Chickweed (*Cerástium*).

* *Petals not longer than the calyx.*

1. **Common Mouse-ear Chickweed** (*C. triviále*).—Stems hairy, not viscid; leaves oblong, tapering; flowers in panicles. Plant perennial. This is a very common plant, though one which is little noticed by any but the botanist. It would, however, if removed from the road, or field, or pasture

where it grows, be missed by the singing-birds, which make a large demand on the capsules, so well stored with tiny seeds. Thomson has said, speaking of Nature,—

"All is form'd
With number, weight, and measure, all design'd
For some great end! where not alone the plant
Of stately growth; the herb of glorious hue
Or foodful substance: not the labouring steed,
The herd and flock that feed us; not the mine
That yields us store for elegance and use;
The sea that loads our tables, and conveys
The wanderer, Man, from clime to clime; with all
Those rolling spheres that from on high shed down
Their kindly influence; not these alone,
Which strike even eyes incurious, but each moss,
Each shell, each crawling insect, holds a rank
Important in the plan of Him who framed
This scale of beings;—holds a rank, which, lost,
Would break the chain, and leave behind a gap
Which Nature's self would rue."

This Mouse-ear Chickweed bears small white flowers throughout the summer, and its seed-vessels, as they ripen, lengthen and become curved. Its stems are spreading.

2. **Broad-leaved Mouse-ear Chickweed** (*C. glomerátum*). — Stem hairy, nearly erect, the upper part viscid; leaves egg-shaped; petals as long as the calyx; bracts leafy. Plant annual. This is a smaller species than the last, though, in other respects, very similar to it, but it may be distinguished by its tufted flowers; these are white and inconspicuous, the petals being sometimes altogether wanting. They may be found from March to September, and after flowering, the capsules, curving upwards as they ripen, occur in great numbers. The stem is much branched at the lower part, and grows to the height of six or eight inches. Lyell remarks of this Chickweed, that it is among the most common plants in the world, being a truly cosmopolitan species. We may find it everywhere in our own land by roadsides, and in fields and pastures.

3. **Five-stamened Mouse-ear Chickweed,** or **Little Mouse-ear Chickweed** (*C. semi-decándrum*).—Leaves egg-shaped, or oblong; stem hairy and viscid, bearing few flowers; upper half of all the bracts and sepals chaffy. Plant annual. This is a common little herb on dry walls, or dry sandy banks and waste places, distinguished from similar species by usually having five stamens, though in a few cases these are but four in number. It blossoms very early in the year, its white flowers being almost hidden by the calyx, which is twice as long as the petals. At the same season the little vernal whitlow grass often grows beside it, though this Chickweed is more frequent than that plant, scarcely an old wall being without it. It remains in flower until May, withering, as Sir J. E. Smith observes, before the narrow-leaved species begins to put forth its far less conspicuous blossoms. It is a pretty little plant, very generally known by the name of Spring Mouse-ear.

4. **Four-cleft Mouse-ear** (*C. tetrándrum*). — Leaves egg-shaped or oblong; stem forked, hairy, and somewhat viscid, with flowers in the forks; calyx rather longer than the petals. Plant annual. This species, which is

1. WATER MOUSE-EAR CHICKWEED
Cerastium aquaticum
2. BROAD-LEAVED MOUSE-EAR CHICKWEED
C. glomeratum
3. NARROW-LEAVED MOUSE-EAR CHICKWEED
C. triviale
4. LITTLE MOUSE-EAR CHICKWEED
C. semidecandrum
5. FOUR-CLEFT MOUSE-EAR CHICKWEED
C. tetrandrum
6. FIELD CHICKWEED
C. arvense
7. HAIRY ALPINE CHICKWEED
C. alpinum

Pl. 45.

in flower from May to July, may be known by its four stamens; and this is a pretty constant character, though it occasionally has five: the corolla is also 4-cleft, and it has leafy bracts. It grows on waste places, walls, and sandy grounds, chiefly, as at Yarmouth, near the sea; but it is not a common plant, and a form of the preceding species is often mistaken for it.

* * *Petals much longer than the calyx.*

5. **Field Chickweed** (*C. arvénse*).—Leaves narrow, tapering, downy; petals twice as long as the sepals; stem much branched, and bending down at the base. Plant perennial. This is by far the handsomest of our common Mouse-ear Chickweeds, having large milk-white flowers, growing two or three together on terminal stalks. It blossoms during May and June, and it would remind us of the flower of the greater stitchwort, but that the petals are thicker in texture, while the foliage has a dull, greyish-green tint, instead of the rich bright green of the stitchwort leaf, which resembles the young blade of corn in its verdure. The Field Chickweed grows in dry sandy and gravelly places, on sunny banks or downs, and is, in some parts of England, a common flower, though in others unknown. It is less frequent in Scotland.

6. **Alpine Mouse-ear Chickweed** (*C. alpínum*).—Stem ascending; leaves elliptical, egg-shaped, or oblong; flowers few; bracts leafy, having usually a narrow membranous margin. Plant perennial. This is a truly alpine plant, growing high up on the mountains of the Highlands, on Helvellyn, and other lofty places, and often in great abundance. It is from three to five inches high, and bears, from June to August, large handsome white blossoms, which delight the lover of alpine flowers. The whole plant is often covered with soft silky down.

7. **Broad-leaved Alpine Mouse-ear Chickweed** (*C. latifólium*).—Leaves somewhat egg-shaped; stem prostrate and tufted; branches usually single-flowered. Plant perennial. This, too, is a mountain flower, its foliage wearing a deeper green tint than that of the last species, which it much resembles. It is chiefly distinguished by its often solitary flowers, and by the short yellowish down with which its leaves are covered.

8. **Stitchwort Mouse-ear Chickweed** (*C. trígynum*).—Stems bending, with an alternate hairy line; leaves oblong, tapering at the base; flowers mostly terminal, two or three together. Plant perennial. This plant, which grows on the Breadalbane mountains of Scotland, and on other mountains north of that range, has large flowers of pure white, during July and August. The much-branched stems are from four to six inches high, and the foliage is downy. This plant is by some writers called *Stellaria cerastoides.*

9. **Water Mouse-ear Chickweed** (*C. aquáticum*).—Lower leaves stalked, upper ones sessile, lance-shaped, tapering to a point; capsule opening with five 2-cleft teeth. Plant perennial. This plant is the largest of the genus, and is, in its general habit, so similar to *Stellaria némorum*, that many writers think that it should at least be considered as belonging to the same genus. It differs, however, from that plant by its fewer styles, and by having hairs only on the margin of its leaves. It has white flowers during July and August, and its stem is one or two feet high. Some writers make it a distinct genus, under the name of *Malachium*, naming it from the Greek

malakos, soft or feeble, on account of its weak straggling habit. It grows on the margins of streams and ditches from Yorkshire southward.

14. CYPHEL (*Cherléria*).

Mossy Cyphel (*C. sedóides*). — Leaves crowded, slender, and awl-shaped; flowers solitary; calyx membranous at the edge; petals none, or rarely present; stamens ten; styles three. Plant perennial. This rare little Cyphel grows at the very summit of the Highland mountains, especially those of the Breadalbane range. It has long roots, and numerous densely tufted stems, which scarcely rise above the ground. Its yellowish-green flowers are, in August, half hidden among its crowded leaves. John Henry Cherler, after whom the plant was named, assisted John Bauhin in preparing his "Historia Plantarum."

15. BUFFÓNIA.

Annual Buffonia (*B. annua*).—Stem loosely panicled from the base; branches spreading, short, and firm; capsules scarcely so long as the calyx; leaves awl-shaped, spreading at the base. Annual. This plant, though still retained in the list of our English flora, is now extinct in this country. It is recorded as having been found in the time of Dillenius and Plukenet, about Boston, in Lincolnshire, and on Hounslow Heath. Many botanists call this *B. tenuifolia*, but Sir W. Hooker and Dr. Arnott remark, "Linnæus' *B. tenuifolia* is made up of several species; hence it is better to adopt the name given by De Candolle."

We have, on an earlier page, noticed the English rural names of many plants—names given by the monks or herbalists of the olden days, expressive of the real or supposed virtues of plants, of religious or other associations. The name *Buffonia* reminds us of a large class of names, many of them of more modern date, given by botanists in memory of men of eminence. A very large number of names, both generic and specific, have this origin; and many, like the Banksias, Fuchsias, and Dahlias of our gardens, or the Cherleria, Linnæa, Sibbaldia, and others of our native plants, serve to remind us of men who have done good service to the cause of science. It is not often that a botanic name bears a contemptuous allusion, and when Sauvages gave the name of *Buffonia tenuifolia* to a plant, because its slender leaves were typical of the slight attainments made by the naturalist in botanical science, he deviated from the ordinary practice of botanists. It is true that Buffon knew little of plants—true that he was a vain man; yet such of us as, like Baron Cuvier, learned from his glowing pictures of animated nature to look around us and mark the wonders and beauties of all living creatures, from the lion to the wren, feel unwilling to associate his name with one contemptuous thought. Flowers should be connected with nought that is unamiable; they are so lovely and so pure, such meet representations of all sweet and kindly sentiments, that we would fain link them with but loving and gentle memories. A few other well-known names of plants have a similar fault; and Linnæus, in his "Critica Botanica," mentions that the genus *Dorstenia*, with its obsolete flowers, devoid of all beauty, alludes to the antiquated and uncouth book of Dorstenius; while the specific name of *Hillia parasitica* is thought by other botanists to be a just satire on the pompous

pretensions of Sir John Hill, though probably Jacquin, who conferred it, might not so intend it. Linnæus, in the book referred to, draws a fanciful analogy between the names of several plants and the botanists after whom they were designated. Thus, the genus *Bauhinia* was named after the two distinguished brothers, John and Caspar Bauhin, and its two-lobed or twin leaf seems an appropriate characteristic. *Scheuchzeria*, a grassy alpine plant, Linnæus says, commemorates the two Scheuchzers, one of whom excelled in the knowledge of alpine productions, the other in that of grasses; while *Magnolia* and *Dillenia*, the former with its noble leaves and flowers, and the latter with its beautiful blossoms and fruit, serve to immortalise two admirable botanists. *Hernandia*, an American plant, one of the most beautiful of all trees in its foliage, but having only inconspicuous blossoms, bears the name of a botanist highly favoured by fortune, and to whom a large salary was given for investigating the natural history of the western world, but whose travels produced little result of any value. The remark made by the great Swedish botanist on the name of the plant called by Gronovius after himself, is somewhat touching, "The *Linnæa*," he says, "a depressed abject Lapland plant, long overlooked, flowering at an early age, was named after its prototype Linnæus."

Many of the names given by ancient botanists to commemorate distinguished persons, or in allusion to the uses to which the plants were applied by their fabulous deities, are yet retained. Such are *Centaurea*, from Chiron, the Centaur; *Euphorbia*, the name of the spurge genus, which immortalises the physician of Juba, a Moorish prince; *Gentiana*, which tells of Gentius, King of Illyria, and has, as Gerarde would say, a "royal and princelie authoritie;" and *Achillea*, which connects our yarrow with the renowned Greek warrior. Many excellent Greek and Latin names, which have been given at different periods, indicate, like others of our simple English ones, certain properties or striking peculiarities of the plant; such as *Amaranthus*, without decay, for an everlasting flower; *Helianthus*, a sunflower; *Lithospermum*, a stony seed, which is given to the gromwells, from their hard nuts; *Origanum*, the joy of the mountain, given because the marjoram thrives on elevated spots; or *Arenaria*, which is a plant of the sand. Of this latter class are some of the best and most expressive names used by botanists. *Glaux maritima* tells us at once that we may expect to find it on the sea-shore. *Hottonia palustris*, the water violet, suggests in its name the marshy habitat; *Sedum rupestre* would lead us to look for the stonecrop on the rock; *Convolvulus arvensis* tells of the cultivated field; and *Poa pratensis* is the grass of the meadow.

Order XV. LINEÆ—FLAX TRIBE.

Sepals 4—5 overlapping while in bud, not falling off; petals equal in number to the sepals, twisted before unfolding, and falling soon after expansion; stamens equal in number to the petals, and alternate with them, united at the base into a ring, with small teeth between them; ovary of about as many cells as there are sepals, and as many styles; capsule approaching a globular form, tipped with the hardened base of the styles, each cell incompletely separated by a partition extending from the back inwards; seeds one

in each imperfect cell, pendulous. This Order consists mostly of herbaceous plants, having yellow, red, white, or blue flowers. It is of great importance, as containing species, the tenacious fibres of which are made into linen.

1. FLAX (*Línum*).—Sepals 5; petals 5; capsule 10-valved, and 10-celled. Name from the Celtic *Lin*, thread.

2. FLAX-SEED (*Radíola*).—Sepals 4; connected below, 3-cleft; petals 4; capsule 8-valved, and 8-celled. Name from *radius*, a ray, either from the ray-like segments of the calyx, or the radiate direction of the branches.

1. FLAX (*Línum*).

* *Leaves alternate.*

1. **Perennial Flax** (*L. perénne*).—Leaves very narrow, tapering to a sharp point; sepals inversely egg-shaped, obtuse, obscurely 5-ribbed. Plant perennial. This rare Flax grows on chalk in many parts of England, as in Cambridgeshire, where one often sees its delicate blue flower in June and July,—a flower so frail, that the lightest breath of wind seems to make it quiver, and a butterfly's passing wing to waft it away. The stems are very slender, about a foot high, several of them arising from one root. The narrow leaves are without stalks.

2. **Narrow-leaved Flax** (*L. angustifólium*).—Leaves very narrow, tapering to a point; sepals elliptical, pointed, 3-ribbed. Plant perennial. This species is more common than the last, especially on the sandy pastures in the southern and western counties of England. It much resembles the Perennial Flax, but is characterised by its more pointed sepals, and the paler blue tint of its equally fragile but smaller flower, which expands from May to September.

3. **Common Flax** (*L. usitatíssimum*).—Stems mostly growing singly from the root; leaves alternate, lanceolate; sepals egg-shaped, acute, 3-nerved, slightly fringed; petals edged with roundish notches. Plant annual. This species has blue flowers, like the last, expanding, too, in the midsummer months; but it is altogether much larger, and the circumstance of its root bearing a single stem, instead of several, is a marked feature of difference. The flower, too, is of a deeper blue colour, and the leaves are more distant. Though quite a common plant of our fields, especially near spots where Flax has been cultivated, and though found apparently wild almost all over Europe, yet neither we nor any other people can claim it as a true native, for it occurs only in those countries where Flax is spun, or linseed-oil expressed. It is *Le Lin* of the French, *Der Flachs* of the German, and the *Vlasch* of the Dutch.

This species is the well-known thread, or clothing plant, so interesting in its associations, so valuable in its productions, and apparently among the earliest cultivated plants in the world. The reader of Holy Writ recalls, at its mention, the period when, in the time of sorrow, brought by God's anger upon the people of Egypt, the Flax was smitten just as it was bolled, that is, furnished with a seed-vessel. The fine linen of Egypt, so often referred to in Scripture, and in other ancient records, was made from it; and specimens of this fabric are yet to be seen in the linen in which the mummies are enfolded. The paintings of the grotto of El Kab yet show the whole process of the ancient manufacture with the greatest clearness; while from

the fact that Rahab hid the Hebrew spies among the Flax spread on her roof, we must infer that the plant was also grown in Palestine in ancient days, as it is even now.

It is thought that the preparation of flaxen thread was long almost confined to Egypt, and that the Jews procured it chiefly from thence, and used it in their fine twined work. The linen of Egypt was also used for sails; for when the Prophet describes the riches of ancient Tyre, he says, "Fine linen with broidered work from Egypt was that which thou spreadest forth to be thy sail;" and the Prophet Isaiah mentions the failure of the Flax as one of the greatest calamities which should befall that country. "Moreover," he says, "they that work in fine Flax, and they that weave networks, shall be confounded." Herodotus mentions that the Greeks received it in his day from Egypt. The Emperor Severus is recorded as the first Roman who ever wore a linen shirt; for woollen garments were the usual attire both of the ancient Romans and Greeks. In the time of Pliny, however, Flax was generally cultivated in many parts of Europe; and that writer describes linen so fine as to equal the web woven by the spider, and at the same time so strong that it yielded a sound like the string of the lute. Still, however, the linen of Egypt had the pre-eminence; for this writer records having seen a linen net from that country, of which the threads were so slender, that, although every cord of the mesh was wrought of a hundred and fifty threads twisted together, yet it could be drawn through a finger ring.

It is generally supposed that the culture of the Flax plant was introduced into Britain during the first settlement of the Romans, though some authors doubt whether linen was ever manufactured here before the Conquest, Flax not being mentioned as a titheable article before the year 1175. In the sixteenth century Acts were passed enforcing its culture in this country, and requiring that out of every sixty acres of land one rood should be devoted to Flax or hemp grounds. Flax was formerly grown much more generally in the United Kingdom than it now is. Many pretty domestic pictures of olden writers, and many a painting wrought by the artist, remind us of the time when Flax was spun at the cottage door into the garment of family use. A little poem, written for this work by Mary Isabella Tomkins, alludes to these times:—

THE FLAX FLOWER.

"It shimmers in the sunshine,
That cup of clearest blue,
As it did love to see above
Its own reflected hue;
A fair flower and a fragile,
Each zephyr bears it down,
Yet know I none beneath the sun,
More worthy of renown.

"And ever when we see it,
What pleasant fancies steal,
Of how, around the fireside found,
We watched the spinning-wheel;
The spinning-wheel unwearied,
When labour else was o'er;
And saw how swift the shadows shift
It casteth on the floor!

"There wrought the cottage mother,
We list'ners gave good heed,
As loved she well with pride to tell
What stores she kept for need;
And how *her* skill the Preacher
Applauds with kindly words,
Whose distaff and whose spindle heap'd
Of old such household hoards."

Extensive Flax plantations are to be found in various parts of Scotland and Ireland, and in the latter country it supplies the material for its large linen manufacture. Happily, this culture has increased in that land; and

manufacturing capital and industry, and agricultural skill, have long been brought into action in this way, thus affording a large means of employment to the poor, since women, and even children, may work in the Flax-grounds. Some agriculturists regret that Flax is not more generally planted throughout the United Kingdom, as many parts are admirably adapted to its culture; and with the exception of the Lake district, the mountainous parts of Wales, Dartmoor, and a few places in Ireland and the borders of Scotland, the climate is well suited for the growth of this plant. Its cultivation differs very widely from that of any other crop, quality rather than weight being the desired object. Large supplies of Flax have hitherto been derived from France and Egypt, but most especially from Russia, Holland, and Belgium. The greatest attention is paid to Flax at Courtrai, and its produce is used for making the finest lace and cambric, the Russian Flax being mostly employed in manufacturing canvas and stout cloths.

Our wild perennial Flax affords almost as good a fibre as that which is more frequently cultivated. The seeds of both also contain a large quantity of oil, from which is expressed the linseed oil of commerce, and the refuse forms the substance called oil-cake, which is used as food for cattle. From the strong fibres of the Flax yarn is spun, and to them we owe our coarsest and our finest linen, from the sheet and tablecloth to the cambric handkerchief, and the lint used by the surgeon. Even when these have served their household purposes, the fragments have other uses, and we may bid them go down—

> "Into the paper-mill, and from its jaws
> Stainless and smooth emerge. Happy shall be
> Its renovation, if on its fair page
> Wisdom and truth their hallow'd lineaments
> Trace for posterity. So shall its end
> Be better than its birth."

Both the Perennial and the Common Flax are often planted as border flowers in gardens, and many beautiful species are introduced hither from other countries. The lovely Golden Flax (*Linum trigynum*), which has blossomed in a stove in this country, has a yellow flower as large as that of the *Eschscholtzia*, and was seen by Captain Hardwicke on the sides of the mountains of India, flowering in great profusion, in December. Its provincial name is *Gul ashorifee*, "flower of the gold coin."

* * *Leaves opposite.*

4. **Cathartic Flax** (*L. cathárticum*).—Leaves oblong, broader at the base; sepals pointed. Plant annual. This pretty little Flax is very different from the other species in regard to size, but the little vase-like blossom is formed like theirs. It is of pure white, and so small, that an emmet would hardly find shelter within its cup. The whole plant has the slender elegance of the Flax tribe. It flowers from June to August, drooping gracefully before expansion. This is a very common species on meadows, chalky hills, and cliffs, where it grows beside the eyebright, the rock-rose, and wild thyme, acquiring from its love of hill-sides the country name of Mill Mountain. It has a long-established reputation in villages as a cure for rheumatism. It rarely grows to the height of six inches, and is as common on the chalky soils of France as on our own.

7. SLENDER BUFFONIA.
Buffonia annua.

1. MOSSY CYPHEL.
Cherleria sedoides.

2. PERENNIAL FLAX.
Linum perenne.

3. NARROW LEAVED FLAX.
L. angustifolium.

4. COMMON FLAX.
L. usitatissimum.

5. CATHARTIC FLAX.
L. catharticum.

6. THYME LEAVED FLAX SEED.
Radiola linoides.

Pl. 16.

2. FLAX-SEED (*Radíola*).

Thyme-leaved Flax-seed (*R. linoides*).—Leaves distant, egg-shaped, entire, smooth; flowers solitary, on short stalks. Plant annual. This is not at all a common plant, though occurring in many parts of our island. It is one of the smallest of our wild flowers. Sir William Hooker and Dr. Arnott remark of the leaves, that when under the microscope, they are seen to be dotted. The flowers are white, growing among the foliage, but they would hardly be observed were they not so numerous. They expand in July and August. Moist boggy soils, and lands in which gravel prevails, are the places on which we must look for this Flax-seed, which, from its small size, is doubtless often passed by without being seen.

Order XVI. MALVACEÆ—MALLOW TRIBE.

Sepals 5, more or less united at the base, valvate in bud, and often inclosed in an outer calyx; petals 5, twisted while in bud; stamens numerous, and united by their filaments into a tube; ovary formed of several carpels united in a radiate manner; styles of the same number as the carpels, either distinct or united; capsules 1-seeded, placed in a whorl round the style; leaves alternate, with stipules. This Order contains a large number of shrubs and herbaceous plants; most of them are clothed with down, and the kidney-shaped 1-celled anthers are found in all. All the species abound in a nutritious mucilage, and no plant among them possesses any unwholesome properties. This mucilage is extracted from some by stewing, and is valuable as a medicine; and several of the mallow tribe are useful as food. The young heads of the *Hibiscus esculentus*, the *Ochra* of eastern countries, are much valued as an ingredient in soups; and the *Abutilon esculentum* serves the same purpose in Brazil. Several of the *Hibiscus* tribe afford excellent medicines; and the *Hibiscus rosa-sinensis* is the Shoe-flower of the East Indies, its juice being used instead of blacking. In China it is also employed for dyeing the hair black, while the seeds of several other species are used as coffee; but the most valuable plant of the tribe is the *Gossypium*, the Cotton-plant, which affords the cotton of our manufactures. This substance is the downy investiture of the seeds.

1. MALLOW (*Málva*). — Styles numerous; outer calyx 3-leaved; inner 5-cleft. Name from the Greek *malaché*, soft, from their emollient mucilage.

2. TREE MALLOW (*Lavatéra*).—Styles numerous; outer calyx 3-lobed; inner 5-cleft. Named in honour of the two Lavaters, Swiss physicians.

3. MARSH MALLOW (*Althœa*). — Styles numerous; outer calyx 6—9 cleft. Name from the Greek *á'tho*, to cure, from its healing nature.

1. MALLOW (*Málva*).

1. Common Mallow (*M. sylvéstris*).—Stem ascending, or erect; root-leaves kidney-shaped, with seven acute lobes; fruit-stalks erect; fruit not downy, wrinkled. Plant perennial.

Everyone knows our Common Mallow, Marsh or Mash-mallow, as country

people frequently and erroneously term it. A very handsome flower it is, when, in the summer months, from June to August, its mauve petals are lying fully open, and giving a bright tint to many a waste piece of ground or field border. This species is not frequent in Scotland or in North Wales, but in England it is universally so; and we have only to walk out of our metropolis towards any of its suburbs, and we are sure to find its large handsome rounded leaves, when fresh and young being bright green, but soon becoming, as the plant grows older, ragged and grey. Under the rock, by the road-side, or in the nook where the long bramble-stems are twining, or the large dock-leaves are clustering, many a bright clump of Mallow is to be found.

"To me the wilderness of thorns and brambles,
Beneath whose weeds the muddy runnel scrambles;
The bald burnt moor, the marshy sedgy shallows
Where docks, bulrushes, water-flags, and Mallows
Choke the rank waste, alike can yield delight;
A blade of silver hair-grass nodding slowly
In the soft wind; the thistle's purple crown,
The ferns, the rushes tall, and mosses lowly,
A thorn, a weed, an insect, or a stone,
Can thrill me with sensations exquisite—
For all are exquisite, and every part
Points to the Mighty Hand that fashion'd it."

It is not alone in its beauty of tint, and in its use to man and animal, that the mallow offers indications of the great Creator's skill. The minute grains of white pollen, or powder, which stud its central column, coming off on our fingers as we touch it, are exquisitely beautiful when examined by the aid of a microscope. Small as they are, their structure is wonderfully organized, each minute particle being, as in several other plants of the Order, a minute globe surrounded with prickles; or, as Linnæus described it, each grain resembles the wheel of a watch, the prickles giving to its globular form in profile this toothed appearance. This pollen is in an earlier stage contained in the anther, which, as we have stated, is kidney-shaped, and which is like a little box filled with these grains of pollen. The anther of plants is at all times a wondrous object; sometimes it consists of several cells, but most frequently it is formed of two, and sometimes, as in the Mallow, of but one. When the pollen is ripe, the anthers burst, and discharge their contents. The granules of pollen are often oblong, but some, like those of the Portugal dill (*Anéthum ségetum*), are cylindrical, and in some plants, as the Virginian spider-wort, they are curved; others are square or oval, and in the evening primrose the shape is triangular, with the angles so much dilated as to give the sides a convex form; some, like those of the Mallow, are studded with prickles, and most are furrowed.

The colour of the pollen of the Mallow is white slightly tinged with lilac, and it varies in different plants to almost every colour except green. It is more often yellow than of any other tint; but in the tall willow herb called French willow the pollen is blue; in the mullein it is red, and in the tulip black. So wonderfully regular, however, are all the characters of natural objects—even the most minute—that a skilful botanist can exactly discover the class of a plant by examining its pollen with a microscope. The American *Journal of Science* for June, 1842, gives a very interesting account

of some showers of pollen, one of which fell at Troy, New York, and another in the harbour of Picton. In the latter case, so large a quantity of pollen was carried through the air, on a serene night in June, that a portion alighting on a vessel in the harbour had to be collected and thrown over by the bucketful in the morning. A small quantity of the powder was, in each of these cases, preserved, and sent to Professor J. W. Bailey, for microscopic examination. This gentleman ascertained that the powder which fell at Picton was wholly composed of the pollen of a species of pine, and that the substance collected from Troy was formed of that of various trees, though he was unable to state with certainty from what trees it had proceeded. Drawings of the three forms of pollen met with in this powder from Troy were furnished by Professor Bailey; and Mr. Hassall, after examination, considered that two of them have to be referred to some endogenous plants, one, most probably, to a species of grass, the other, perhaps, to a plant of the water-lily genus; and that the third form was unquestionably the pollen of an exogenous plant, not unlikely to be that of the hazel.

The seeds of the Mallow are often by country children, both in England and France, called cheeses; and many of us besides Clare can recall

> "The sitting down, when school was o'er,
> Upon the threshold of the door,
> Picking from Mallows, sport to please,
> The crumpled seed we call'd a cheese."

The leaves of the Mallow are used as an application to wounds, and are often boiled and placed with excellent effect over painful swellings; and an infusion or decoction of the leaves is a very valuable and simple medicine in cases where mucilaginous drinks are needed. Did we prize them as the old herbalists did, we might exclaim with the poet—

> "Alas! when Mallows in the garden die;"

for wondrous indeed were the virtues imputed to them in the olden time. The leaves boiled in wine and water are said, by one old writer, to be "very convenient in agues"; and the decoction of the seed in milk was said, with more reason, "marvellously to help diseases of the chest"; while the leaves laid upon the eye were to remove all its maladies; and, rubbed upon a limb stung by a wasp, were to take away all pain. The feet were to be bathed with a decoction of the leaves, roots, and flowers, as a certain cure for a cold; and the falling off of the hair was to be stayed by a timely application of a similar preparation. We are amused at finding how confidently both herbalists and poets of those days trusted in the efficacy of plants. They must have had hopeful natures, the men of those times, to have lost sight of the repeated disappointments which must have followed the application of some of their specifics. Michael Drayton, in the "Polyolbion," gives a long list of plants prized for healing virtues, and does not omit the truly useful Mallow:—

> "Here wholesome plantaine, that the paine
> Of eyes and ears appeases;
> Here cooling sorrel, that againe
> We use in hot diseases;
> The med'cinable Mallow here,
> Assuaging sudden tumours;
> The jagged polypodium there,
> To purge out evil humours."

But all the praises of the Mallow are outdone by those of Pliny, who gravely assures us,—"Whosoever shall take a spoonful of any of the Mallows, shall that day be free from all the diseases that may come unto him;" and adds that it is a special good against the falling sickness. No wonder that nervous disorders were less common in those days, when men and women went forth forearmed, as they believed, against the attacks of the most terrible epidemics, if they used only the aid of the plant which grew by the wayside; and when, however they might feel for the sufferings of others, they believed themselves to be invulnerable to so many ills.

Dr. Bromfield found a variety of the Common Mallow in the Isle of Wight, with flowers of a sky-blue colour. Another variety has prostrate stems, and a third bears small blossoms. The French call the mallow *La Mauve;* it is *Die Malve* of the Germans, the *Malume* of the Dutch, and the *Malva* of the Spaniards and Italians.

2. **Dwarf Mallow** (*M. rotundifólia*).—Stem prostrate; leaves roundish, heart-shaped, with five shallow lobes; fruit-stalks bent down; fruit downy. Plant annual. This species, which is altogether smaller than the last, is not so frequent, though in some parts of England it is not uncommon. It is rare in Scotland. It is easily distinguished, not only by its prostrate stems, but by its much smaller and lighter-tinted flowers, which are of a pale greyish lilac. It blossoms from June to September, and its stems are from four to twelve inches long.

Both this and the Common Mallow are valued as food in Eastern countries, and both extend from Europe to the north of India. The Dwarf Mallow is cultivated in gardens at Rosetta, where it is called Hobere; and it is one of the culinary vegetables in most common use there, and daily eaten with meat. Many writers have supposed that one or other of these species was referred to by Job, when he says of those who in his distress assumed a superiority over him, that they formerly "cut up the Mallows by the bushes for their meat." The Mallow of the patriarch has been an object of much learned discussion, the Hebrew word *malluach* having a resemblance to the Greek *malakhi*, which signifies mallow, and also to *maluch*, which is said to be the Syriac name of a species of Atriplex. It is quite likely that both these plants may have been eaten in Arabia, as they are still in other parts of the East. Russell mentions that the fields about Aleppo are planted with bugloss, Mallow, and asparagus, which the people use as pot-herbs. A plant commonly called Jews' Mallow may, however, be the one intended. This is the *Córchorus olitorius* of the botanist, and is a species of Mallow, of glutinous substance, and with roughish pods. It is commonly used in Eastern dishes, and is called by the Arabs Mallow Keali. The learned Bochart, and some other writers, think that the Hebrew word implies a saltish plant, and refer the Mallow of Job to the tall shrubby orache of the Continent (*Atriplex halimus*); while other writers have believed that some of the saltworts (*Salsola*) are intended. These plants are all articles of Eastern diet, and common on the dry saline soils of the deserts which extend from the south of Europe to the north of India.

3. **Musk Mallow** (*M. moschàta*).—Stem erect; root-leaves kidney-shaped, deeply 5 or 7-lobed, and cut; stem-leaves deeply 5-lobed, and

1. COMMON MALLOW
Malva sylvestris

2. DWARF MALLOW
M. rotundifolia

3. MUSK MALLOW
M. moschata

Pl. 47.

variously cut into numerous narrow segments; outer calyx-leaves very narrow; fruit hairy. Plant perennial. This is the handsomest of our native species of Mallow, its large, light rose-coloured flowers standing, in July and August, on a stem two or three feet high, and growing several together, from among the terminal leaves. Many of the pastures and roadsides, especially such as have a gravelly soil, are decked with this pretty and fragrant flower, but there are rural districts in which it is quite unknown. The foliage is of a delicate light green, and has, when the weather is warm, a sweet odour of musk, which, during the daytime, is perceptible only on handling the plant, but which becomes more powerful in the evening. It sometimes bears white flowers, and is often planted in gardens.

2. Tree Mallow (*Lavatéra*).

Sea Tree Mallow (*L. arbórea*).—Stem arborescent; leaves downy, plaited, with about seven angles. Plant biennial. The sea buckthorn, the sand willow, and our Tree Mallow, are almost the only shrubby plants of our seashores, and the last is by far the most showy of them all. It is well known to most lovers of flowers, being often planted in gardens and shrubberies near the sea, but it is not common as a wild plant. It occurs in several places on rocks in Cornwall, at Teignmouth and other parts of Devon, on the Isle of Wight, on the island of Steep Holmes, on the west coast of Anglesey, and on several parts of the Scotch and Irish shores, as well as in the isles of the Frith of Forth. It grows sometimes wild on the walls of harbours, but is not found inland, except when cultivated. In gardens the Tree Mallow grows well, and attains a large size. A young plant sometimes survives one or more winters, if it has not flowered, but when once it has blossomed it perishes. Its large, purplish, rose-coloured flowers, deepening in tint towards the centre, are very ornamental to the sea-rocks, from July to September. The stem attains, in favourable circumstances, eight or ten feet in height. The Tree Mallow is *La Lavatère* of the French, *Der Malvenbaum* of the Germans, and the *Malvaiscao* of the Portuguese.

Another species of Tree Mallow, the *Lavatera olbia*, is a much more beautiful shrub. It was named *Olbia* by Linnæus, that being the ancient name of the town of Hyères, which is about twelve miles from Toulon. The plant grows in abundance in the neighbourhood of this celebrated place, which was the Hieros of the Greeks, but which in later days received the name of Arcæ from the Romans, who enriched the town with many monuments, all of which have now disappeared. Mr. Munby, in his sketch of the botany of this neighbourhood, remarks, "We gathered also the *Lavatera olbia*, which was pushing its branches to the height of ten or twelve feet, loaded with thick clusters of blue flowers. This plant, together with the shrubby *Atriplex halimus*, were woven with the prickly branches of *Smilax áspera*, and form an impenetrable fence to the few patches of ground that are inclosed. These two plants are also the most interesting to an English botanist, who in his own country has been accustomed to see species of this last genus scarcely able to raise their heads from the ground; and he who has been fortunate enough to meet with the *Lavatera arborea*, will be capable of judging of the magnificence of a tree of the same genus."

3. Marsh Mallow (*Althœa*).

1. **Common Marsh Mallow** (*A. officinális*).—Leaves 3 to 5-lobed, soft and downy on both sides, heart-shaped, or egg-shaped, toothed, entire; flower-stalks axillary, many-flowered, and shorter than the leaves. Plant perennial. This, too, is a plant of the seashore, and, if we except the Michaelmas daisy, it is the most showy flower of the salt-marsh. It may be seen from afar, as we wander over the desolate green flats, its stems often attaining the height of three feet, and looking at a distance like a small shrub, decked, during August and September, with large pale rose-coloured blossoms. These grow three or four together from the axils of the grey-green leaves. We know of no other British leaf possessing the downy surface of that of the Marsh Mallow, which is to the touch so like a piece of soft thick velvet, that one can hardly imagine it to be a leaf. This plant is very rare in Scotland, and, perhaps, not truly indigenous, though found in the Solway Frith, and at Arran and Campsie. In many parts of England it is common in the salt marshes, both of the sea and the salt rivers. In some country places it is called Wymote; the French term it *La Guimauve*, and *Mauve-gui*, that is, Clammy Mallow. In Germany this plant is termed *Der Eibisch*, and in Holland *Der Heemst;* and it is the *Altea* of the Spaniards. Old writers called it *Malva visca*, on account of the quantity of mucilage which it contains, and which mingles with a saccharine principle. It exists in every part of the plant, but especially in the root, which is perfectly white when peeled and dried. Mallow roots of very fine quality have been produced in some districts of France, and these are sent to the large towns, where their thickened juices are mingled with sugar, and made into lozenges, which the French call *Pâtés de guimauve.* The mucilage is an old remedy for coughs, and was prescribed for pulmonary affections by Hippocrates; while, among our old herbalists, the Marsh Mallow was almost unrivalled for its remedial properties, every part, from the seed to the root, being prepared in various ways, so as to offer a cure for almost every malady to which the human frame is liable; and, assuredly, it was not only as safe, but as salutary a medicine as any contained in their long list. A decoction of Marsh Mallow is still taken with advantage as a demulcent, and the boiled leaves form a valuable application in cases of abrasion.

The Marsh Mallow is a native of every country of Europe, and we seldom look upon its large grey leaves without recalling to mind one of the uses to which the plant was applied in darker days. In times when men accused of crime had to give a supposed proof of their innocence or guilt by passing through some ordeal, persons of weak health or delicate frame, especially monks and ecclesiastics, were exempted from the usual mode of single combat, and were required to test their innocence by holding red-hot iron in the hand. As these trials were made in the church, and during the performance of the Mass, and as inspection was made by the clergy alone, the suspected person, if he had friends about him, was easily shielded by covering his hands with a thick coating of some substance which would enable him to resist the action of heat. A kind of paste used for this purpose was described,

1. TREE MALLOW.
Lavatera arborea.

2. MARSH MALLOW.
Althæa officinalis.

3. HISPID MALLOW.
A. hirsuta.

Pl. 48.

in the thirteenth century, by Albertus Magnus, a Dominican monk. The sap of the Marsh Mallow, the slimy seeds of a kind of Flea-bane (which were until recently used in Germany by hat-makers and silk-mercers), together with the white of an egg, were combined, to make the paste adhere, and the hands were then as safe as if covered with a pair of gloves. Beckmann, remarking on this, says—"The use of this juggling trick is very old, and may be traced back to a Pagan origin. In the 'Antigone' of Sophocles, the guards placed over the body of Polynices, which had been carried away contrary to the orders of Creon, offered, in order to prove their innocence, to submit to any trial. 'We will,' said they, 'take up red-hot iron in our hands, or walk through fire.'"

The ancients planted some kinds of Mallow about the tombs of their departed friends, and made large use of them as vegetable food; but the particular species which they used cannot be ascertained. It is not likely that the Marsh Mallow would be planted in a cemetery; most probably, therefore, some of the many species common in our gardens, several of which grew wild in the South of Europe, are the kinds used by the Greeks and Romans. The beautiful hollyhocks of our flower-beds—*la rose d'outre mer*, as the old French writers termed it—are all varieties of the *Althæa rosea*, which is a native of China. Its leaves are said to yield a colouring matter little inferior to indigo. A large number of other species of *Althæa* are common, too, as border flowers.

2. **Hispid Marsh Mallow** (*A. hirsúta*).—Leaves cordate, rough with hairs, lobed, and crenate; stem hairy; flower-stalks single-flowered, longer than the leaves. Plant annual. This *Althæa* may be easily distinguished from the other species by its solitary flowers, and its bristly stem and rough leaves. It is very rare, growing between Cobham and Cuxton, in Kent, occurring there in considerable abundance; and near Somerton in Somersetshire. Although it has been considered by Hooker and others to be only naturalized in its Kentish locality, it is a fact that it has held its ground there for many years, while Mr. Baker, who discovered its Somersetshire station, is inclined to consider it as indigenous there.

Order XVII. TILIACEÆ—LIME TRIBE.

Sepals 4 or 5, valvate when in bud; petals of the same number as the sepals, often with a little pit at the base, sometimes wanting; stamens numerous; glands 4 or 5 at the base of the petals; ovary single, of from 2 to 10 united, rarely distinct, carpels; style 1, with as many stigmas as carpels; capsule with one or more seeds in each cell. This Order consists of trees or shrubs, and a few herbaceous plants, the latter being found only in tropical countries. Though less viscid than the *Malvaceæ*, they are all mucilaginous and innocuous, and some, like the lime-tree, have a thick tough bark. One genus, *Corchorus*, is the Jews' Mallow, which, as has been before stated, is by some believed to be the Mallow of Scripture. The fibres of another species, *Corchorus capsularis*, are twisted into fishing lines and nets by the Indians. The *Sloanea* of the hothouse is one of this Order; it is a native of South America. It has very large white flowers, and fruit as large and

as round as a tennis-ball, armed all over with strong spines, and regularly divided into four cells, each containing a seed like a small chestnut.

LIME (*Tília*).—Sepals 5, soon falling off; petals 5, with or without a scale at the base outside; ovary 5-celled; style 1; capsule 1-celled, not opening by valves, 2-seeded. Name of uncertain origin.

THE LIME, or LINDEN-TREE (*Tília*).

1. **Small-leaved Lime-tree** (*T. parvifólia*).—Leaves obliquely heart-shaped, smooth on both sides, with the exception of small tufts of downy hair on the under surfaces; flower-stalks springing from a leaf-like bract, many-flowered; capsule brittle. Plant perennial. This species has better claims than *Tília vulgaris* to be regarded as a native tree, though many writers doubt if any Lime is truly indigenous. It grows in woods, in Essex, Lincolnshire, Sussex, and other English counties, as well as in some parts of Wales, bearing its yellowish-green flowers in July and August.

2. **Common Lime,** or **Linden-tree** (*T. vulgaris*).—Leaves twice the length of the foot-stalks, smooth on both sides, except a few tufts of downy hair beneath; branches and flower-stalks smooth; nectaries none. Plant perennial. This, though probably not a truly British tree, is very common in our woods and hedgerows, and has been for some centuries planted in avenues and parks. It is well fitted to lend its shadow to the public promenade, for it bears the smoke of the city well, its only defect being, that it is late in coming into leaf, and one of the first to shed its foliage, looking sere and yellow long before the elm or beech is showing a tinge of the autumnal brown. It is a favourite tree for avenues on the Continent, and is largely planted in Holland and Germany. We owe some of our Lime-walks, doubtless, to John Evelyn, who, in his "Sylva," recommended its culture for this purpose. He describes trees growing in Switzerland, Germany, and Hungary, as attaining an immense size; and after referring to the esteem in which the tree is held by the people of these countries, as it was by the ancient Romans, adds, "It is a shameful negligence that we are no better provided with nurseries for a tree so choice, and so universally acceptable." At that time there were no plantations of young Limes in England, and our countrymen procured these plants from Holland and Flanders.

It is very pleasant to sit beneath a Lime-tree on a summer's evening in July, when the green flowers are fully expanded; for the odour, imperceptible during day, becomes then most deliciously fragrant, and the green shadow refreshes us, while the whispering of the soft airs among the well-clad boughs gives gentle music. Linden-trees, even in our country, often attain a considerable size, and they then become of a beautiful form, though younger trees have usually a formal appearance. The flowers are very profuse, and are so much prized by bees, that these insects keep up a perpetual humming on a summer's day among the branches. In Lithuania, near Kowno, where there are large forests of Limes, the honey is remarkable for its excellence, and much valued for medicinal purposes, and as an ingredient in liqueurs, Kowno honey being worth double the price of any other.

1. SMALL LEAVED LIME TREE.
Tilia parvifolia.

2. COMMON LIME TREE.
T. vulgaris.

3. LARGE LEAVED LIME TREE.
T. platyphyllos.

Pl. 49.

The ancestors of our great Swedish botanist owed their name to a Linden-tree growing near their dwelling, Linné being the Swedish name of Linnæus; and Hohenlinden is one of many places called after this tree. Several Linden-trees are famous in local histories and in poetry, like that under which Martin Luther stood and preached the doctrines of the Reformation; or that huge tree, at Fribourg, which commemorates the victory of the Swiss over Charles the Bold, in 1476. This tree is old, but a Lime-tree older yet, and supposed to have been planted a thousand years ago, stands at no great distance from it, and has a trunk thirty-six feet in circumference. One of the finest Limes in England is that celebrated one of Moor Park, in Hertfordshire, which is surrounded by many a large and old companion, and is itself nearly a hundred feet high. What Bryant said of another group of trees is true of these Limes :—

"These shades are still the abodes
Of undissembled gladness: the thick roof
Of green and stirring branches is alive
And musical with birds, that sing and sport
In wantonness of spirit; while below,
The squirrel, with raised paws and form erect,
Chirps merrily. Throngs of insects in the glade
Try their thin wings, and dance in the warm beam
That waked them into life. Even the green trees
Partake the deep contentment as they bend
To the soft winds; the sun from the blue sky
Looks in, and sheds a blessing on the scene;
Scarce less the cleft-born wild-flower seems to enjoy
Existence than the winged plunderer
That seeks its sweets."

Professor Burnett tells us that there are some famous old Lime-trees, a variety of *Tilia platyphyllos*, growing in the churchyard of Seidlitz, in Bohemia, the broad leaves of which are hooded; and the peasants assure you that they have miraculously borne hooded leaves ever since the monks of a neighbouring convent were hanged upon them.

The Rev. C. A. Johns, in his work on the Forest Trees of Britain, mentions several remarkable Lime-trees as having been described by various authors. "At Chalouse, in Switzerland," says this writer, "there stood one in Evelyn's time, under which was a bower composed of its branches, capable of containing 300 persons sitting at ease; it had a fountain, set about with many tables formed only of the boughs, to which they ascend by steps, all kept so accurately and so very thick, that the sun never looked into it." The same author mentions another famous Lime at Neustadt, in Wirtemberg, which gave a distinctive name to the town. Its huge limbs were supported by numerous stone columns, bearing inscriptions. This tree was still in existence, Loudon tells us in his "Arboretum," in 1838, the trunk being eighteen feet in diameter, and beneath its broad shadow the people of Neustadt were then, like the men of former generations, accustomed to sit and eat fruit; many gooseberry-bushes having sprung up in the crevices and hollows of the bark, and furnishing a supply to those who came to sit beneath the shelter of the old tree.

German poets, like our own, often refer to the Linden-tree. Even so long ago as the days of Chaucer, it was to be found on the poet's pages.

"There weren Elmis grete and strong,
Maplis, Ashe, Oke, Aspe, Planis long;
Fine Ewe, Popler, and Lindis faire,
And other trees full many a paire,
What should I tell you more of it?
There werein so many trees yet,
That I should all encombred be,
Er I had rekenid tre."

The timber of the Lime is light, smooth, close-grained, and not liable to be worm-eaten. Various boxes, screens, and other articles on which ladies paint flowers, are made of the wood, and it is valued by carvers for ornamental work. Many of the screens in palaces and cathedrals are formed of this material; and those airy wreaths of flowers carved by the skilful hand of Grinling Gibbons, which no artist since has rivalled in grace and beauty, are made of Lime-wood. In the choir of St. Paul's Cathedral are some exquisite specimens of this work, and some very delicate and elegant wreaths adorn Trinity College, Cambridge. Artists have the scribblets for their first draughts made of Lime-wood; and when burnt it forms one of the best charcoals for the maker of gunpowder. Turners, toy-makers, and various artisans use it in their work; and ropes are made of the fibres of the bark in Lincolnshire, the Forest of Dean, and in Wales. This, peeled off in thin layers, is used for making the mats which gardeners wrap about tender trees. It is called bass or bast, and forms a considerable part of the exports from Russia.

So many materials are now used for making paper, and that article is so cheap, and so easily procured, that we no longer need, even in the most remote villages, the bark of trees as a material on which to write. In former days, however, the bark of the lime was commonly used for this purpose, and strips of it were also separated for forming ornamental head-dresses. Evelyn mentions a book written on the inner bark of the Lime, which was brought to the Count of St. Amant, Governor of Arras, 1662, for which the Emperor gave 8,000 ducats. It contained "a work of Cicero, De ordinandâ Republicâ, et de inveniendis Orationum Exordiis; a piece inestimable, but never published, and now in the library at Vienna, after it had formerly been the greatest rarity in that of the late Cardinal Mazarin."

The nuts of the Lime-tree are said to have, when roasted, the flavour of chocolate, and might be used as a substitute; a good sugar has been obtained from the saccharine substance with which the sap abounds, and a pleasant wine made by fermenting it. The flowers and bracts, when dried, are sold in the shops of Paris for coughs, and their demulcent nature is very apparent to us, if we only eat a leaf, or one of the young buds in spring, which are full of mucilage. This species of Lime is chiefly distinguished from the last by its coriaceous fruit.

3. **Broad-leaved, Downy Lime-tree** (*T. platyphyllos*).—Nectaries none; leaves downy, especially beneath, with solitary hairs; origin of the veins woolly; young branches and leaf-stalks hairy; fruit woody. Plant perennial. This tree has stronger claims than either of the other species to be considered as a native. It grows in several woods in Hereford, Radnor and West Yorkshire, flowering in June and July.

Order XVIII. HYPERICINEÆ—ST. JOHN'S WORT TRIBE.

Sepals 4 or 5, not falling off, unequal, often fringed with black dots; petals of the same number as the sepals, sometimes unequal-sided, twisted when in bud, often bordered with black dots; stamens numerous, united at the base into three or more sets; ovary single; styles 3—5; fruit, a capsule or berry, composed of several valves and cells, the valves curved inwards; seeds minute, numerous. This order consists of herbs or shrubs, most of them having opposite leaves. Their flowers are chiefly yellow, and they abound in a resinous juice, the greater number being glandular. Both leaves and petals are generally dotted with black, are viscid, mostly bitter, and slightly astringent. Some species are used as febrifuges, or as lotions; and one is reputed in Brazil to be an antidote against the bite of serpents. Many afford a good yellow dye; and one of the St. John's Worts is commonly employed by dyers in Quito, to give that colour to wool. A few of the plants of this order are tropical, but it consists chiefly of herbs, growing among hedges and trees in the cooler parts of Europe and Asia. The genus Parnassia is by many botanists included in this order, but its place is doubtful, and some writers refer it to the *Saxifrageæ*. It differs from the St. John's Wort, in not having opposite leaves, in its fewer stamens, as well as in various other particulars.

1. ST. JOHN'S WORT (*Hypéricum*).—Sepals 5; petals 5; stamens numerous, filaments united at the base in 3 or 5 sets; styles 3, or rarely 5; capsule 3-celled. Name from *Hyperikon*, the Greek name of the plant.

2. GRASS OF PARNASSUS (*Parnássia*).—Calyx deeply 5-cleft; petals 5; stamens 5, with fringed scales interposed; stigmas 4; capsule 1-celled, with 4 valves. Named from Mount Parnassus.

1. ST. JOHN'S WORT (*Hypéricum*).

* *Styles* 5.

1. **Large-flowered St. John's Wort** (*H. calycínum*).—Stems square, branched, and single-flowered; segments of the calyx unequal; leaves oblong and blunt. Plant perennial. This shrub is found apparently wild in some bushy places, as at Ryde, in the Isle of Wight. Though growing also at Cork without culture, it is probably there a naturalized plant, as it is doubtless in many parts of the kingdom, having been long a common ornament of gardens and shrubberies. It is generally about three or four feet in height, bearing, from July to September, large handsome yellow flowers, with the conspicuous bundles of numerous golden anthers, which, like the blossom of all the species, have a strong odour of resin, especially when bruised. There is often much redness on the leaves of this plant.

* * *Styles* 3, *sepals not fringed.*

2. **Common Tutsan** (*H. androsæmum*).—Stem 2 edged and shrubby; leaves egg-shaped, sessile; sepals unequal; capsule pulpy, and like a berry. The only two counties of England in which this Tutsan is common are Devon and Cornwall, though it occurs occasionally in others, and the author has found it at Higham, in Kent. It is frequent in Ireland and the west

of Scotland. It is a handsome shrub, very strongly scented, and the leaves, as well as the glossy, berry-like capsule, much tinted with red in autumn. The flowers are numerous and showy, of bright golden yellow, expanding in July. This species is about two or three feet high, and is often called Park-leaves. It was once much esteemed as a vulnerary, and its leaves laid on wounds. Its common English name is a corruption of *Tout-saine*, All-heal.

3. **Square-stalked St. John's Wort** (*H. quadrángulum*). — Stem herbaceous, erect, with four somewhat winged angles, branched; leaves oblong, egg-shaped, with pellucid dots; sepals erect, lanceolate. Plant perennial. This species grows commonly in damp places, having stems one or two feet high, and flat panicles of yellow flowers. It blossoms in July and August.

4. **Perforated St. John's Wort** (*H. perforátum*).—Stem herbaceous, erect, 2-edged; leaves elliptic-oblong, copiously perforated with pellucid dots; sepals erect, lanceolate acute. Plant perennial. During the months of July and August, and often as late as the end of September, the golden blossoms of this plant are commonly seen in woods and hedges, on grassy banks, or in shady lanes. Several of the species are blooming at the same season, and their general aspect is very similar, but this is the most noticeable kind, and is well distinguished by the marked character of its two-edged stems. A lovely plant it is, with its wealth of golden flowers growing on a branched stem one or two feet high, and having its yellow petals profusely dotted with black. The leaves are strongly ribbed, and of delicate green, reddening somewhat with age, and full of clear dots, easily seen if we hold the leaf up to the light. The flowers have a sweet scent of lemon, mixed with resin, and if we grasp them, they leave a yellow stain on our fingers. They will tinge spirits and oil of a rich purple colour, and if dried and boiled with alum, they dye wool of a fine yellow hue. Those pellucid dots in the foliage are full of an essential oil, which, indeed, pervades the whole plant, which is aromatic and astringent. The flowers are made into gargles, lotions and salves; and some good botanists recommend that further trial should be made of their remedial powers. The author has much faith in the efficacy of ointment made from St. John's Wort, and could go willingly now, as she did in the days of childhood, over dale and hill, to bear away a basketful of its blossoms for domestic use. The plants, when gathered, were put into a large vessel of water, forming thus a magnificent nosegay, and the flowers being picked off the stems daily, as they expanded, were finally made into a salve, which served well to heal the scratches or more serious wounds made during rambles among bush and briar, and which certainly healed them quickly and surely. This St. John's Wort salve is still much used in villages in Kent, and, probably, also in other counties, for it is a very old remedy. Dioscorides and Pliny spoke its praises, as did Gerarde, Dodonæus, Culpepper, and all our old English herbalists. The latter commends it as a marvellous cure for various disorders, and says, in the quaint manner of these old writers, "It may be, if you meet a Papist, he will tell you, especially if he be a lawyer, that St. John made it over to him by a letter of attorney." "It is," he adds, "a singular wound herb;" and after praising leaves, flowers, and roots, for various uses, he says, "The seed, too, is much commended, being

1. LARGE-FLOWERED ST JOHN'S WORT.
Hypericum calycinum.

2. COMMON TUTSAN.
H. androsæmum.

3. SQUARE STALKED ST JOHN'S WORT.
H. quadrangulum.

Pl. 50.

drank for forty days together, to help sciatica, the falling sickness, and palsy." Indeed, so greatly is the plant eulogised, that it almost rivals in its assumed balsamic effects the wonderful plant in the Field of Balsam, described by Sir John Mandeville, which was an infallible specific for fifty different diseases, though, unfortunately, according to a later traveller, that balsam had perished, "either through carelessness of the gardener, or through fraud of the Jews, or through religion and piety having been offended by people in the neighbourhood." Happily, our flower yet remains, though some of its old uses have died away.

One of the notions respecting the St. John's Wort in the olden times was, that it had a great efficacy in maniacal cases; and some old writers on this account gave it the fanciful name of *Fuga Dæmonum*. This name led to a variety of superstitions, or, as they have been called, "pleasant absurdities," which in course of time became, in various countries, connected with the plant. The fact that this genus of plants had, by the monks, been dedicated to St. John the Baptist, was an additional cause, too, for reverencing them; and this species was, and still is in some countries, carefully gathered on the eve of the festival of that saint, and with some ceremonies hung about the windows and doorways of houses, as a preservative against evil spirits; while the Scotch formerly wore it about their persons to protect them from witchcraft and the evil eye, and from the ill designs of spirits; for many believe with Milton that—

> "Thousands of spiritual creatures walk the earth
> Unseen, both when we wake, and when we sleep."

Nor was the practice confined to our northern countrymen; it was observed by the peasants of France and Germany, who, in some remote places, still regard it as a safeguard against thunder. It is known almost everywhere by the name which connects it with the saint. The French not only call it *Le Mille-pertuis*, from its perforated leaves, or *Toutsaine*, from its healing virtues, but also know it as *l'Herbe de S. Jean*. *Dos Johannis Kraut* is its German name; and the Dutch call it *St. Jan's Kruid;* but the Italians term it *Pelatro*, and the Spaniards *Corazoncillo*. In Kent, one of the common names of the species is Amber.

Among the plants which, like the mistletoe, the vervain, and the hawthorn, stand associated with old English customs, the St. John's Wort holds a conspicuous place. The old practices on Midsummer Eve, the Vigil of St. John the Baptist's Day, gave great occasion for its use, year after year; and as, not in London only, but in other towns, and even in villages, the Midsummer bonfires were lighted, the plant must in those days have been gathered in great quantities. These bonfires were of high antiquity; and that the practice of lighting them on this day was a remnant of the pagan rites usual on the Festival of the Summer Solstice, several observances used at them abundantly prove. The custom of turning round a wheel on these occasions is related or hinted at by writers treating of those times; and the wheel was designed by the Pagans to signify by its revolution the sun's annual course. In later years it was believed to roll away ill luck from those who used it. In the translation given by

Barnaby Googe of the Latin poem of Naogeorgus, called "The Popish Kingdom," we have a full description of the rites used on St. John's Eve :—

"Then doth the joyful feast of John
The Baptist take his turne,
When bonfiers great, with loftie flame,
In everie towne doth burne ;
And young men round about, with maides,
Do daunce in everie streete
With garlandes wrought of Motherwort,
Or else with Vervaine swete,
And many other flowres faire,
With Violets in their handes,
Whereas they all doe fondly thinke,
That whosoever standes
And thorow the floures beholds the flame,
His eyes shall feel no paine ;
When thus till night they daunced have,
They through the fire amaine,
With striving mindes doe run, and all
Their hearbes they cast therein ;
And then with wordes devout, and prayers,
They solemnly begin
Desiring God that all their illes
May there consumed be,
Whereby they thinke through all that yeere
From agues to be free :
Some others get a rotten wheel,
All worne and cast aside,
Which, covered round with straw
And tow, they closely hide ;
And caryed to some mountaine's top,
Being all with fire light,
They hurle it downe with violence,
When darke appears the night,
Resembling much the sunne that from
The heavens downe should fal,
A strange and monstrous sight it seemes,
And fearefull to them all."

The plants chiefly used on these occasions are more particularly named by Stowe, in his "Survey of London"; and he says that, on the Vigil of St. John, every man's door was shadowed by green birch, fennel, St. John's Wort, orpine, white lilies, and such-like, garnished up with garlands of beautiful flowers, and had also lamps of glass, with oil burning in them all night. Pennant, in later days, speaks of the custom in Wales of hanging St. John's Wort over the doors on Midsummer-Eve; and the following curious extract, quoted by Sir Henry Ellis in one of his notes to Brande's "Antiquities," is interesting; it is from Bishop Pococke. "Whanne men of the countree uplond bringen into Londoun at Mydsomer-Eve braunchis of trees from Bischopis wode, and flouris fro the field, and bitaken tho to citessins of Londoune, for to therwith arraie ther houses, that thei mak therwith ther houses gay into remembraunce of Seint Johan Baptist, and of this that it was prophecied of him that manie schulden joie in his burthe."

5. **Imperforate St. John's Wort** (*H. dúbium*).—Stem herbaceous, erect, 4-sided, with rounded angles; leaves nearly destitute of dots; sepals reflexed, elliptical, blunt. Plant perennial. This is not a common plant, and rarely occurs in any quantity. It has much the general aspect of the perforated species, and the same properties, and the two would be gathered indiscriminately, either for medicinal uses, or to serve for the—

"St. John's Wort, scaring from the midnight heath
The witch and goblin with its spicy breath."

The corolla is often marked with small black dots, and its stem is about one or two feet high. This herb is common in Russia, where it is employed as an antidote to canine madness, for which purpose, like many other popular remedies, it is perfectly ineffectual. It flowers in August, and is most often found in bushy places. A variety, with toothed sepals, and petals dotted and marked with purple streaks, grows in wet places, and has by some been called *H. maculatum*; others consider both as forms of *H. quadrangulum*.

1. PERFORATED ST JOHNS WORT.
Hypericum perforatum.

2. IMPERFORATE ST JOHNS WORT.
H. dubium.

3. TRAILING ST JOHN'S WORT.
H. humifusum.

4. MOUNTAIN ST JOHN'S WORT.
H. montanum.

6. **Trailing St. John's Wort** (*H. humifúsum*).—Stems prostrate, somewhat 2-edged; leaves oblong, obtuse, perforated with clear dots; flowers somewhat cymose; stamens rarely more than fifteen in number. Plant perennial. This pretty little St. John's Wort has its blossoms of the same hue and form as all the other species, but its mode of growth is very different from any of the preceding. Its slender stems, from three to nine inches long, covered during July with blossoms, spread over stone walls, gravelly heaths, or boggy pastures. Both corolla and calyx have at their edges a few scattered black dots, but not distinct enough to entitle the plant to a place in the next group. This St. John's Wort, though somewhat local, is plentiful in many places; it is one of the prettiest plants of the genus, and well adapted for growing in pots. The odour is rather disagreeable.

* * * *Styles* 3; *sepals fringed with glands.*

7. **Mountain St. John's Wort** (*H. montánum*).—Stem erect, round, smooth; leaves oblong, sessile, smooth, with glandular dots near the margin; sepals acute, fringed with shortly-stalked glands. Plant perennial. This is not an unfrequent plant in hilly limestone districts, where there is a growth of underwood; and it also occurs on many chalky or gravelly soils, flowering in July and August. Its stem is about two feet high; the leaves are rather large and distant. Though the yellow petals are without glands, the calyx and bracts are beautifully fringed with them, and form a very distinctive mark in this species from any of those yet described. The glands, which abound in the genus *Hypericum*, as well as in many other plants, contain in all this family a deep red juice in the cells. Glands may be described as cellular bodies containing some peculiar secretion, and situated on or below the skin or cuticle which covers the surface of the plant. Stalked glands are very singular objects, being elevated on a little stalk, which is in some cases simple, in others branched. Link described them as either simple or compound, the former being composed of a single cell, and placed upon a hair acting as a direct conduit, occasionally interrupted by divisions; the latter kind consisting of several cells, and seated upon a stalk, containing several conduits; and thus these delicate dots are seen by the microscopic observer to have a most perfect and beautiful structure.

8. **Hairy St. John's Wort** (*H. hirsútum*).—Stem erect, nearly round, downy; leaves egg-shaped or oblong, downy beneath, slightly stalked. Plant perennial. This species, which grows in woods and thickets on limestone soils, is well marked by the downy nature of its somewhat large leaves. Its general aspect much resembles that of the mountain species. It flowers in June and July.

9. **Small Upright St. John's Wort** (*H. púlchrum*).—Stem erect, round, smooth; leaves heart-shaped, clasping the stem, smooth; sepals obtuse, fringed with sessile glands; petals fringed with glands. Plant perennial. This is a very slender plant, bearing many flowers at the top of its stem. It may, indeed, like some of the other species, be described as it was by Cowper, "Hypericum, all bloom;" for in May and June its loose panicles are so conspicuous that we hardly notice its small leaves. The flowers are deep yellow,

often tinged, as well as the stem, with red; while the red anthers, and the young buds tipped externally with a rich carmine tint, render them very attractive. The stem is very slender, and sometimes two feet high, and the leaves few and scattered. The sessile glands, or glands without stalks, occur in various parts of plants. They vary much in form, being in some cases conical, and in some, as in the *Cruciferous* plants, little roundish shining bodies. In some plants, as the acacias, they are tiny hollows, surrounded by a thickened rim; in others, they are kidney-shaped, or of some other form.

10. **Marsh St. John's Wort** (*H. elódes*).—Stem creeping, branches erect; leaves roundish, and, as well as the stems, densely covered with shaggy down. Plant perennial. Mr. Johns, in his "Flowers of the Field," justly remarks of this plant, that "it may be detected at some distance by the hoariness of its foliage, and by the strong, and far from pleasant, resinous odour which it emits, especially in hot weather." This scent is indeed very strong, and is, in the opinion of the author, more disagreeable than that of any other species, being altogether destitute of that lemon-like perfume which mingles with the resinous odour of the Perforated and some other kinds. The flowers of this species are of a pale yellow colour; they are few, and expand in July and August. Reddish-coloured glandular serratures fringe its calyx, and its stamens are fifteen in number. Though rare in Scotland, it is not unfrequent on the spongy bogs of England. It appears to be the plant called by earlier botanists *Ascyron tomentosum palustre*. Dr. Vaughan, in a letter to the great naturalist John Ray, remarks: "I much wonder that this plant has not been taken more notice of in physic, for I look upon it to be one of the best balsamic astringent plants we have; the native Irish call it *Birin yarragh*." As none of the species have a stronger odour than this, it is not improbable that it possesses more powerful properties than any of the other plants of the genus.

11. **Linear-leaved St. John's Wort** (*H. linarifólium*).—Stems erect; leaves narrow, with their margins rolled under; flowers in a terminal cyme; sepals lanceolate, their margins with numerous black spots, and glandular serratures. Plant perennial. This very rare species is, save in its erect habit, very similar to the Trailing St. John's Wort. It is described as growing on the slopes of hills of several parts of Jersey, on the banks of the Tamar and other rivers of Devon, and also on some parts of the sea-coast of Cornwall. It has small flowers, in July and August.

12. **Bearded St. John's Wort** (*H. barbátum*).—Stem erect and rounded; leaves egg-shaped, with black dots scattered over the under surface; sepals fringed with long-stalked glands; flowers in a terminal cluster; petals minutely fringed and dotted. This is a doubtful native, described by Mr. Don as growing at the side of a hedge, near Aberdalgie, in Strathearn, Perthshire. It is characterized by the long hairs of its calyx, to which it owes its specific name. Sir William Hooker and Dr. Arnott remark, that they do not believe it ever was really found wild in Scotland. Many exotics were recorded by Don as growing wild in this country which no other botanist has ever been able to find.

1. HAIRY St JOHN'S WORT.
Hypericum hirsutum.
2. SMALL UPRIGHT St JOHN'S WORT.
H. pulchrum.
3. MARSH St JOHN'S WORT.
H. elodes.
4. BEARDED St JOHN'S WORT.
H. barbatum.

Pl. 52.

2. Grass of Parnassus (*Parnássia*).

Common Grass of Parnassus (*P. palustris*).—Leaves heart-shaped, mostly from the roots, one on the stalk clasping; flower terminal solitary; bristles of the nectary from 9 to 13. Plant perennial. This very pretty flower, which has no just pretensions to the name of grass, is frequent on the bogs and wet places of the north of England, but is rare in the midland and southern counties. Its stem is from six to eight inches in height, and in August it is surmounted by the handsome cream-coloured blossom marked with darker veins. The flower is very singular on account of its large fan-shaped nectaries, which consist of scales, each arranged opposite to a petal, and having their margins fringed with conspicuous white hairs, which have each a clear yellow globular gland at the tip. The plant is by no means peculiar to Mount Parnassus, though well fitted to grace a spot so well known to fame. Dr. Clarke does not even describe it among the flowers which he found on that classic mount, which, he says, is bleak and bare at its summit, save where a few alpine plants, with their large blossoms, and leaves covered with woolly down as a protection from the cold, arrest the attention of the wanderer. Lower down, this traveller found the alpine daphne, several beautiful species of cineraria, yellow potentillas, rock bell-flowers, and thorny thistles; and lower still, dark groves of pine-trees cast their dark shadows on his footpath. Doubtless, the beauty of the flower, rather than its abundance in that region, gave it the name of Grass of Parnassus, and its allusion to that place is preserved in most of its European names. The French term it *Fleur de Parnassus;* the Dutch *Parnuskruid;* and the name of *Parnassia* is common to the Italian, Spanish, and Portuguese. Either this, or a similar species, grows on the bogs of Russia, where it is called *Pereloi trawa;* and it is the *Einblatt* of the Germans. Dr. Clarke found it on the borders of Lapland, flowering in July, and thus expresses his pleasure at the sight:—"This evening we found that beautiful plant, *Parnassia palustris*, in flower; it was growing on a swampy spot, and to us was quite new; for, although frequently found in Wales and the northern counties of England, and so far south as the moors near Linton and Trumpington in Cambridgeshire, we, as natives of Sussex, had never seen it." One or two very pretty species have been introduced into our gardens from North America; the *Parnassia fimbriata* from that land is a most lovely flower, but as the seeds will not vegetate after a voyage, the young plants must be brought into this country.

Order XIX. ACERINEÆ—MAPLE TRIBE.

Calyx divided, occasionally into 4—12 parts, but consisting usually of 5; petals of the same number; stamens about 8, inserted on a flattened ring beneath the ovary; ovary 2-lobed; styles 2; stigmas 2; fruit 2-lobed, 2-celled, not bursting; lobes winged on the outside; cells 1—2-seeded; leaves opposite, generally simple; flowers axillary. This Order consists wholly of trees which belong to the temperate regions, occurring in all parts of Europe, and in the north of India, but unknown in Africa. Some of the largest species of the Order are found in North America, where they form a

conspicuous and ornamental portion of the forest trees. Lyell, who remarks on some Maples growing at Mount Washington, 4,000 feet above the level of the sea, says that the autumnal tints of these trees are most beautiful, varying in every colour from orange to pale yellow, and from bright scarlet to a rich purple hue. Several species have a sugary sap, and the Sugar Maple (*Acer saccharinum*) of North America produces an abundance of sugar; while both sugar and treacle are also obtained in a somewhat lesser quantity from the Red Maple (*Acer rubrum*), which grows in the swamps of Pennsylvania. Maple sugar is often seen in this country, in large flat pieces, resembling in appearance the substance called candied horehound. It is an important article of manufacture, and an ordinary tree yields from fifteen to thirty gallons of sap, from which from two to four pounds of sugar may be procured, the tree remaining uninjured by the incisions made in it, and continuing to furnish its produce for forty years. The Red Maple is adorned with handsome scarlet flowers, which expand long before the leaves appear. Its bark also yields a good deep blue colour for the dyer, and an excellent ink is made from it.

MAPLE (*Acer*). — Calyx 5-cleft; petals 5; capsules 2, each furnished with a long wing. Name from the Celtic *Ac*, a point, on account of the hardness of the wood, which was formerly used for spears, and other sharp-pointed instruments.

MAPLE (*Acer*).

1. **Common Maple** (*A. campéstre*).—Leaves 5-lobed; lobes somewhat blunt, scarcely cut; clusters of flowers erect. This Maple is a picturesque little tree, very common in our woods and hedges, its leaves in spring being of the most delicate green. In the autumn none of our native trees exhibits a brighter foliage, which is first of a dull ochrey yellow, then of deeper hue, and lastly of an orange rich enough to remind us of the Maples of America, whose brilliance is so often described by travellers. The hues of the American species, however, tint the leaves in an earlier stage of their progress, and are not, as with ours, a sign that decay is making rapid progress, and that before some other trees have lost a leaf, these will all be strewed on the earth. The author received from America some very beautiful wreaths, made on paper, of the dried leaves of the Maple and sumach; the former wearing rich hues of green, red, and purple; the latter glowing in the scarlet tints of the brightest coral. They were preserved in memory of a friend, and years passed over and left their brightness untouched. Seeing that the leaves of our Maple were of golden yellow, and of some of our cherry-trees of richest crimson and orange, the author dried these leaves, and formed a similar picture; but in a few months their beauty was lessened, and almost all their brightness finally passed away. Our Common Maple has its foliage often thickly dotted with little red prominences, not so large as the head of a pin, but by their number giving to all the leaves of a branch a red appearance. This is caused by the puncture of an insect, which finds in its tissues a nidus for its young. The bark of the tree is very rugged, and its pretty upright blossom of delicate green appears in April and May, with the catkins of the hazel, and the gold and silvery balls of the willows, and

1 GRASS OF PARNASSUS
Parnassia palustris

2 LINEAR-LEAVED St JOHN'S WORT
Hypericum linarifolium

Pl. 53.

often adorns the nosegay of primroses, blue-bells, violets, orchises, stitchworts, and celandines, which is gathered from wood and meadow in that delightful season.

The timber of our picturesque little tree is said to be far superior to that of the beech or sycamore for the purpose of the turner; while the mathematical instrument maker often substitutes it for the holly or boxwood. It was formerly much employed for making pikes and lances; but its chief use now is for gun-stocks and musical instruments. Bowls and trenchers were, some centuries since, commonly made of Maple-wood; thus we find in Milton's "Comus"—

> "For who would rob a hermit of his weeds,
> His few books, or his beads, or Maple dish,
> Or do his grey hairs any violence?"

Delicately wrought bowls were sometimes made of this knurled wood, so thin as to transmit the light. The unfortunate fair Rosamond is said to have drunk her fatal potion from a bowl of this material; and the beautiful drinking-vessels, so much prized in mediæval times, were chiefly made of the Maple, and took their name from the Dutch *maeser*, or the German *maszholder*, which are the names of the tree in Holland and Germany. These bowls were sometimes wrought of other wood, as the walnut and the ash; and a very beautiful mazer, formed of the latter, was found a few years since in the deep well in the ruined castle of Merdon, near Hursley, built by Bishop Henry de Blois, A.D. 1138. The ashen wood was at that period thought to be gifted with certain medicinal qualities; but that the Maple-wood was the ordinary material for mazers, the old poets testify. Spenser gives a striking description of one of these bowls:—

> "A mazer ywrought of the Maple warre,
> Wherein is enchased many a fayre sight
> Of bears and tygers, that maken fiers warre;
> And over them spred a goodly wilde vine,
> Entrailed with a wanton yvy twine.
> Thereby is a lambe in the wolve's jawes;
> But see how fast renneth the shepheard swain,
> To save the innocent from the beaste's pawes,—
> And here with his sheepehooke hath him slain.
> Tell me, such a cup hast thou ever seene?
> Well mought it become any harvest queene!"

And Beaumont and Fletcher thus allude to these bowls—

> "And dance upon the mazer's brim."

A very beautiful and large mazer, of the time of Richard the Second, is figured in the *Archæological Journal* of 1845, in a paper contributed by Mr. T. Hudson Turner, "On the Usages of Domestic Life in the Middle Ages." The material is apparently of Maple-wood, and the embossed rim of silver gilt bears the legend:—

> "En the name of the Trinite
> Fille the kup and drinke to me."

The writer of this valuable paper remarks—"Our ancestors seem to have been greatly attached to their mazers, and to have incurred much cost in enriching them. Quaint legends, in English or Latin, monitory of peace and

good-fellowship, were often embossed on the metal rim on the cover; or the popular but mystic Saint Christopher, engraved on the bottom of the interior, rose in all his giant proportions before the eyes of the wassailer, as he drained the bowl, giving comfortable assurance that on that festive day, at least, no harm could befal him." The latest poet who alludes to the mazers is Dryden, in the seventeenth century; but the Maple bowl was probably in use among the humbler classes some years after.

According to Evelyn, the knobs of old Maple-trees, variegated with tints of dark and lighter brown, were collected at high prices in his day by the lovers of works of art. They were, when strongly veined, much prized by the Romans. "Of such," says Baxter, "were composed the celebrated Tigrin and Pantherin tables, of which some particular specimens, as those of Asinius, Gallus, King Juba, and the Mauritanian Ptolemy, are said to have been worth their weight in gold."

This species of Maple is not common in Scotland; and Sir William Hooker doubts if it is indigenous either in that country or Ireland; but it grows in woods and shrubberies there among the trees—

> "Some glossy-leaved and shining in the sun,
> The Maple, and the beech of oily nuts
> Prolific."

2. **Greater Maple**, or **Sycamore** (*A. pseúdoplátanus*).—Leaves 5-lobed, unequally serrated; clusters of flowers drooping; wings of fruit slightly diverging. Plant perennial. This tree is much larger and handsomer than the Common Maple, but is not truly wild, having been introduced into this country about the fourteenth century. It grows, however, in hedges in many parts of the kingdom, and is often planted near houses and in shrubberies, affording during summer a broad and pleasant shadow by its outspread, leafy boughs. No tree is better adapted for plantations near the sea; for the bleak winds and salt spray, which stunt and deform so many trees, seem favourable to this; and however roughly the winds may blow, it is never bent on one side, but preserves its upright and symmetrical form; while under its shelter smaller plants and shrubs will grow and thrive. The winds of high hills also leave it unhurt; and it is, therefore, often to be seen by the door of the cottage or farmhouse standing in exposed situations; while on mountains at the north of Europe it is a common tree. It grows in Norway by the seashore, is plentiful throughout Germany and Switzerland, in the north of Poland and Lithuania, attaining, on a tolerable soil, a very large size, and rapidly rising from a young shoot to a goodly tree. It is so common in England that, though it is not truly wild, Bishop Mant enumerates it among the trees which adorn the vales and groves of upland or lea.

> "The branching Sycamore, that veils
> His golden shoots in dark-green scales,
> While still, as on the fabric goes,
> Each pair to each succeeding shows
> Its produce in a transverse line,
> That step by step they all combine
> To frame, by constant interchange,
> Of cross-like forms a gradual range."

Our old herbalists describe the leaves of this plant as "excellent good" for the liver and the spleen, and the roots were considered to be, when bruised, a valuable application for various pains. The sweet milky juice

1. GREATER MAPLE OR SYCAMORE.
Acer pseudo-platanus.

2. COMMON MAPLE.
A. campestre.

3. COMMON WOOD SORREL.
Oxalis acetosella

4. YELLOW PROCUMBENT WOOD SORREL.
O. corniculata.

Pl. 54.

with which it abounds would, if extracted during winter, furnish a small quantity of sugar. This juice renders the leaf obnoxious to insects; and Linnæus much recommended the growth of this tree, both on that account and for its timber, adding that its juice might also be rendered of use. The timber forms an excellent fuel, giving great warmth as it slowly burns. The musical instrument and cabinet makers make much use of it; and good wooden platters are still made of it, though not so frequently as they were in days when earthenware was little used. One great charm of the tree in the olden times has been lost by the increase of knowledge. Our fathers believed, as they sat beneath its shade, that they were looking up into the boughs of the kind of tree in which Zaccheus hid himself, to see our Saviour pass by; but it is now well known that the Sycamore of Scripture is a species of fig-tree. Our tree often lives from a hundred to a hundred and fifty years, and even much older trees are on record.

Some very large Sycamores are described as having grown in various parts of this kingdom. One mentioned by Sir Thomas Dick Lauder, at Calder House, in the county of Edinburgh, measured in October, 1799, seventeen feet seven inches in girth; its trunk being about twelve feet high, and its branches extending to a distance of sixty feet in diameter. This tree was known to have existed before the Reformation, and was therefore not less than three hundred years old; yet it had the appearance of being perfectly sound. This was the tree to which, in former years, the iron jugs, a species of pillory, were fastened; and as the tree gradually grew over them, they became completely inclosed in its trunk, a large protuberance on the surface marking the place at which they were embedded in the wood. "But the most remarkable Sycamores in Scotland," says the Rev. C. A. Johns, in his "Forest Trees of Britain," "are those which are called 'Dool trees.' They were used by the most powerful barons in the west of Scotland for hanging their enemies and refractory vassals on, and were for this reason called dool, or grief-trees. Of these there are three yet standing; the most memorable being one near the fine old castle of Cassillis, one of the seats of the Marquis of Ailsa, on the bank of the river Doon. It is not so remarkable for its girth of stem, as for its wide-spreading branches and luxuriant foliage, among which from twenty to thirty men could be easily concealed. It was used by the family of Kennedy, who were the most powerful barons of the west of Scotland, for the purpose above mentioned. The last occasion was about two hundred years ago, when Sir John Fau of Dunbar was hanged upon it, for having made an attempt, in the disguise of a gipsy, to carry off the then Countess of Cassillis, who was the daughter of the Earl of Haddington, and to whom he had been betrothed prior to his going abroad to travel. Having been detained for some years a prisoner in Spain, he was supposed to be dead, and in his absence the lady married John, Earl of Cassillis. It is said that the lady witnessed the execution of her former lover from her bedroom window."

The leaves of the Sycamore are often rendered clammy to the touch by the sweet substance called honey-dew, and plants growing beneath are frequently much injured by the dropping of this sweet liquid. This honey-dew has by many writers been believed to be caused by aphides, but others

consider it to be a natural secretion from the leaf of this and other trees. Pliny gravely hesitated whether he should regard this exudation as the "sweat of the heavens, the saliva of the stars, or a liquid produced by the purgation of the air." There is no doubt that, though this stickiness may be at times due to the secretions of aphides, it is in most cases attributable to the vital energy of the tree itself, analogous to the "gumming" of plum and other trees, and consequent upon the over-production of certain substances in the tissues. This honey-dew is sweet as well as sticky, containing both *mannite* and cane-sugar, which accounts for its attractive quality as concerning insects. But it also affords a suitable nidus for the germination of the spores of various fungi, which in turn draw nutriment from the leaf-tissues, and so set up unhealthy conditions resulting in the premature fall of the leaf, without, however, entailing any real injury to the tree.

Very frequently, in autumn, the foliage of the Sycamore is more or less disfigured by a black fungus, which gives to the leaves the appearance of having had large drops of ink scattered upon them. In some seasons these spots are very abundant, and in one year the author saw a row of Sycamores in which almost every leaf was thus disfigured, so as to attract the notice of those who rarely observed plants. This fungus is the *Uncinula bicornis*, and when observed with a powerful microscope it is seen to be a curled tubercle, with a rugged border. The leaves so affected fall off at the first frost, and these spots then gradually corrode their entire substance.

The Sycamore-tree is never more attractive than in the early spring, when the young, tender, green foliage is shooting forth, and when the small pink scales, which at first envelop the handsome lobed leaf, are just being scattered around the tree by every gust of wind. When autumn is on its way, the more sober red of the gradually ripening winged seed-vessels, as well as the varied hues of the foliage, are also very ornamental among the deepening tints of the wood. Cowper described it as—

> "The Sycamore, capricious in attire,
> Now green, now tawny, and ere autumn yet
> Has changed the wood, in scarlet honours bright."

Order XX. GERANIACEÆ—GERANIUM TRIBE.

Sepals 5, not falling, ribbed, overlapping when in bud; petals 5, clawed, twisted while in bud; stamens 10, often alternately imperfect, usually united by their filaments; ovary of 5 carpels, placed round a long awl-shaped beak; styles 5, united to the beak; stigmas 5; fruit beaked, separating into 5 capsules at the base of the beak, and terminating in a long awn, which finally curls up, bearing with it the capsule. This is a large Order, composed chiefly of herbaceous plants, but comprehending also a few shrubs. The genera are distributed over various parts of the world, a great number of them being found at the Cape of Good Hope. These are chiefly the Pelargoniums, which are the plants usually called Geraniums, some of which are to be found in most gardens, and are the commonest of window plants. The genera Erodium and Geranium are mostly natives of Europe, North America, and Northern Asia. A slight degree of astringency and acidity is

possessed by the Geranium, and a fragrant essential oil has been distilled from *Pelargonium odoratissimum*, which is said somewhat to resemble attar of roses, and to be quite as pleasant. Another species of this genus, *Pelargonium cucullatum*, has been regarded as an emollient, and the ground tubercles of *P. hirsutum* are esculent, and much prized by the Arabs as food. The leaves of the common scarlet Geranium, the bright flowers of which are to be seen in many a cottage window, have in some works on medical botany been much extolled as remedies to be laid upon the wound inflicted by any sharp instrument. The whole tribe is innocuous, but their chief value consists in the lovely flowers with which they deck our lanes and meadows, or, as in the Pelargoniums, with which they grace our gardens, rooms, and greenhouses.

1. CRANE'S-BILL (*Geránium*).—Petals regular; stamens 10, 5 of which are alternately larger, and have glands at the base; fruit beaked, separating into 5 capsules, each with a long awn, which is naked (not bearded) on the inside. Name from the Greek *géranos*, a crane, from a fancied resemblance of the fruit to the beak of that bird.

2. STORK'S-BILL (*Eródium*).—Petals regular; stamens 10, of which 5 are imperfect; glands 5 at the base of the perfect stamens; fruit beaked, separating into 5 capsules, each with a long spiral awn, bearded on the inside. Name from the Greek *erodion*, a heron, from the resemblance of the fruit to the beak of that bird.

1. CRANE'S-BILL (*Geránium*).

* *Flower-stalks single-flowered.*

1. **Bloody Crane's-bill** (*G. sanguíneum*).—Root-leaves nearly round, with 7 deeply-cut lobes, each of which is 3-cleft; stem-leaves 5 or 3-lobed. Plant perennial. This species is, from May to September, so beautiful with its large flowers of bright purple, that we regret that it is not more frequent. It produces a large quantity of foliage; its stem is hairy, swelling at the joints, and about a foot or a foot and a half high. Though not a common flower, it grows abundantly on some limestone and magnesian soils. In a very interesting paper, written by Mr. W. Thompson, on the relation between geological strata and the plants growing on their superincumbent soils, the author remarks:—"The basaltic ranges claim certain species, which, if not peculiar to them, are at least more luxuriant when they are grown upon whinstone soil. The native Gerania I have always found thriving best in such districts. *Geranium sanguineum*, the most elegant of the genus, is richer in its tints and stronger near Edinburgh and on the Carrick shore of Ayrshire than anywhere else throughout the whole range of my botanical excursions. On mountain lime it is slender and straggling; on the basaltic ledges of Salisbury Crags, and beneath the scaurs of the Ayrshire whin, it exhibits the same dense bed of flowers, with a thickness of stem, compactness of leaf, and a hairiness of clothing so different, as almost to mark it out as specifically distinct from the *G. sanguineum* of North Wales, and its lakes. The *G. sanguineum* of Carrick extends nearly a mile along the shore, in one continued tract of beauty, exhibiting a luxuriance superior to that of any

other flower of distinguished loveliness which our island produces." This flower also grows abundantly with the broom-rape, along the ledges of the cliff in another district of mountain limestone, St. Vincent's Rock, and Clifton Downs, near Bristol. A variety of this Crane's-bill has been found by botanists on the sands of Walney Island, in Lancashire, with pale flesh-coloured flowers, varied with purple.

* * *Flower-stalks 2-flowered.*

2. **Dusky Crane's-bill** (*G. phæum*).—Stem erect; flowers panicled; sepals slightly pointed; capsules keeled, hairy below, wrinkled above. Plant perennial. This species is frequently cultivated in gardens, but is rare as a wild plant; and even when growing in our woods and thickets it is always the outcast of some neighbouring garden, or its seed was borne thither by wind or bird from a more distant plot. The flowers are of a dingy purplish-black colour, looking like the blossom of some poisonous plant. They occur in May and June. A variety with white flowers is said, by Sir William Hooker and Dr. Arnott, to be found on the sands of Barrie, near Dundee.

3. **Knotty Crane's-bill** (*G. nodósum*).—Stem smooth; leaves opposite, with 5 or 3-pointed serrated lobes; petals with a deep notch; sepals with long awns; capsules downy, but not wrinkled. Plant perennial. This plant is another introduced species that has established itself in shrubberies; but it is said to have grown formerly on the mountainous parts of Cumberland, and between Hatfield and Welwyn, in Hertfordshire.

4. **Blue Meadow Crane's-bill**, or **Crowfoot Meadow Crane's-bill** (*G. praténse*).—Stem erect; leaves palmate, 5-lobed; lobes cut and serrated; stamens smooth, tapering from a broad base; capsules hairy all over; fruit-stalks bent down. Plant perennial. This is the largest of our British Crane's-bills, and is, from June to August, a very handsome flower, of a beautiful purple colour, attaining, when luxuriant, about the size of a florin piece. The stem is often more than three feet high, and the plant is well distinguished by its much divided leaves. It is most frequently found among bushes and thickets, particularly near waterfalls, and is common in moist copses in Cambridgeshire, and in the neighbourhood of London. Mr. Thompson remarks:—"*Geranium pratense* is, I am persuaded, to be found luxuriant only in basaltic districts. Every stream in Ayrshire, and to the east of Glasgow, is rendered eminently beautiful by the rich azure of its transparent petals, and the singular verdure of its long-stalked leaf. The Clyde, the Calder, the Tannock, and every streamlet near Bothwell and Campsie Fell, possesses this flower. The bed of these rivers is basaltic. In Ayrshire, the Ayr,* the Marnock, the Doon, the Irvine, and the Garnock, have tufts of this plant on their banks from the source to the sea. Long before botany became a study, these flowers gave an interest to that country, which is still remembered with something of the quiet delight which an early love of Nature produces and perpetuates; and even now, after the contemplation of mere beauty in flowers has given place to the pursuit of their

* "This stream, the Ayr, occasionally crosses schist and plastic clay. In such places this Geranium is not to be found."

1. BLOODY CRANE'S-BILL
Geranium sanguineum
2. WOOD CRANE'S-BILL
G. sylvaticum
3. HERB ROBERT
G. robertianum.
4. SHINING CRANES-BILL
G lucidum
5. ROUND-LEAVED CRANE'S-BILL
G. rotundifolium.
6. JAGGED-LEAVED CRANES-BILL
G. dissectum.

scientific arrangement and philosophic purposes, there is a childish delight in the rencontre of such mementos of early days, when time, and thought, and pleasure were young and pure. I have met them thus in southern counties, and occasionally near the Irwell, but how altered! '*Quantum mutati ab illis!*'—the hue is less brilliant, the herbage weaker, the bed a few thin and scattered patches. What can be the cause? Is it that later impressions are warped by prejudice, from want of novelty, or of the requisite associations? or does the pre-eminence of Ayrshire Crane's-bill depend on the position of the streams, where it grows over basaltic rocks, whose débris is more suited to vegetation of this kind than the washing of the new red sandstone of Lancashire? The latter conclusion I am willing to adopt," adds our author, "because it is the most reasonable, and, if for no other reason, because it favours my theory."

5. **Wood Crane's-bill** (*G. sylváticum*).—Stem erect, many-flowered; leaves palmate, 7-lobed; lobes cut and serrated; stamens awl-shaped, fringed; capsules keeled, hairy; fruit-stalks erect. Plant perennial. This rare plant grows in woods and pastures, chiefly in the northern parts of this island. It has, in June and July, very pretty purple or pale rose-coloured flowers, which are smaller than those of the Meadow Crane's-bill, but larger than the blossom of the Dusky species. It is distinguished from the Meadow Crane's-bill, not only by its smaller size, but also by its capsules, which are most hairy about the keel, and by its stamens, which are fringed about half-way up. This species is particularly interesting because more than a hundred years ago Konrad Sprengel, noticing the hairs on the claws of its petals, was led to search out their purpose, and this started him upon those researches into the relations of flowers and insects which Charles Darwin and others in our own day have so largely verified and extended.

6. **Mountain Crane's-bill** (*G. pyrenáicum*).—Stem erect, downy; root-leaves kidney-shaped, 5—7 lobed; lobes oblong, blunt, 3-cleft, and toothed; petals notched, and twice as long as the pointed sepals. Plant perennial. Although this species grows in many meadows and pastures, yet it is not a common flower. Its stem is two or three feet high, and its numerous small purple blossoms have their petals very distinctly 2-cleft. It has a spindle-shaped root, while in all the former species the root consists of long fibres arising from a premorse tap-root.

7. **Shining Crane's-bill** (*G. lúcidum*).—Leaves nearly round, 5-lobed; sepals angular and wrinkled; capsules with 3 keels, and wrinkled; stems spreading. Plant annual. The foliage and stems of this pretty species are very smooth and glossy, and the lower leaves, which are smaller than the upper ones, are often tinged with bright red. The stems are but a few inches in height, swelling at the joints, and the elegant little rose-coloured flowers expand in May, continuing in blossom till July. The plant is not uncommon in hilly and mountainous countries, on rocks, walls, and roofs of houses. Mr. Thompson remarks of this species, that it belongs especially to lime districts, and seems not appropriate to basalt. Derbyshire, he says, abounds with this plant. He also met with a luxuriant crop of it near Warwick, where it was growing on a base of lime which was at a considerable depth below the surface.

8. **Stinking Crane's-bill, or Herb Robert** (*G. robertiánum*).—Stems spreading; leaves ternate, or quinate; leaflets deeply cut, the segments with minute points; sepals angular, hairy; capsules wrinkled and hairy. Plant annual. This pretty little Geranium, flowering in early spring and lingering sometimes in autumn among the last of the flowers, is the most common of all our native species. Everyone knows it, and most of us have bound it in the nosegay gathered in childhood from woods and thickets, and green lanes and meadow hedgerows. It comes with the brilliant blue germander speedwell to tell of the approach of summer; and before a flower has yet expanded on the bank, we may see its beautifully-cut leaves gleaming in the sun. When winter is approaching and flowers are gone, and many green leaves are turned brown, this foliage is often among the few bright things which are left, and, touched with a rich glow of crimson, it seems not to need the addition of blossoms to render it attractive. We have in September seen masses of it covering large heaps of stones with its stems and leaves, and thought, as the robin sat sweetly singing near it his prelude to the winter, that the hues of bird and leaf accorded well with each other. Mr. Thompson says that it grows with peculiar luxuriance on basalt, and that it is one of the most abundant plants in Ayrshire. He remarks that near the river Doon especially, its size was such as to incline him to examine it as a new species. We forget its strong and disagreeable ódour when we see its hundreds of pink stars contrasting with the purple blossoms of the ground ivy, or mingled in the later year, as the poet has described them, among many lovely wild flowers :—

"Loudly raves
The bustling brook, which many a chasm hath cleft,
Where springs the hispid comfrey; and above,
In rich exuberance, light-vein'd ivy trains
A drapery o'er the loftier trees. Here glows
The crimson berry of the guelder-rose,
Whose vine-like leaves have caught a sanguine stain
From the October sun. Down in the grass,
And blushing through green blades, Herb Robert fain
Would catch the eyes of pilgrims as they pass,
Who seek for rarer plants."

This plant is a native of many lands besides ours, and has smiled upon those who have wandered in Brazil and Chili, reminding them of the green lanes of England. In some places a decoction of the plant is used in medicine. The herb contains tannin, and exerts an astringent action on the system, and by the old herbalists it was regarded as a good vulnerary. They probably gave it its familiar name after some Robert renowned in their days, though unknown in ours. It appears to possess more astringency than either of our British species, but some foreign species exceed it in this respect. The *Geranium maculatum*, which is a common plant from Canada to North Carolina, enlivening with its pale lilac flowers many a grassy and leafy spot, contains so much astringency that it is known in America by the name of Alum-root, and is employed by physicians as a remedy in complaints of the throat and in general debility. Dr. Bigelow ascertained that this species contained a great proportion of tannin and gallic acid, the amount of tannin appearing to be greater than that of any other constituent, and Barton says

it might form a substitute for kino. Our common Herb Robert is believed to be obnoxious to many insects, and is by cottagers often placed near beds to repel them; and the strong odour is probably disagreeable to these intruders. In North Wales, it is believed to be an efficacious remedy for gout. Some of the exotic *Geraniaceæ*, as *Sarcocaulon l'herétière*, have stems which burn like torches, emitting during combustion a most fragrant odour. The French call our plant *Le Geranion*, and the Italians term it *Geranio*. It is the *Storchschnabel* of the Germans, and the *Oijevaarsbek* of the Dutch.

9. **Dove's-foot Crane's-bill** (*G. mólle*).—Leaves roundish, lobed, cut, and downy; petals notched; capsules wrinkled, but not hairy; seeds smooth. Plant annual. This is almost as frequent a species as the Herb Robert, though growing more in the grass of the pasture lands than the former plant. It occurs also on banks and wayside places, and is often covered with the dust of the road; its downy leaves, soft as velvet, and of a greyish-green hue, on spreading stems, forming large circular clumps. Being one of the earliest of spring flowers, its little reddish-purple cups may often be found among its foliage in March, and they continue to expand till October, though their colour is not so bright at this season as in the earlier part of the year. The French call this flower *Pied de Pigeon*.

10. **Round-leaved Crane's-bill** (*G. rotundifólium*).—Leaves roundish or kidney-shaped, lobed, and cut; petals entire; capsules hairy, not wrinkled; seeds dotted. Plant annual. This much resembles the species last described, and is probably sometimes mistaken for it; it is not, however, like that, a common plant, but occurs in some few pastures and waste places, beginning to blossom at a later season, its small purple flowers seldom peeping up from the leaves before the month of June. It may be distinguished from the Dove's-foot by its petals without notches, and by its dotted seeds, which are very pretty when seen under a microscope.

11. **Small-flowered Crane's-bill** (*G. pusillum*). — Leaves roundish, lobed, and cut; petals notched; stamens five; capsules keeled, downy, not wrinkled; seeds smooth. Plant annual. This Crane's-bill, which bears very small rose or purple flowers throughout the summer, is also much like the Dove's-foot, and resembling it in its downy foliage and spreading stems, it is, to the unpractised botanist, difficult of distinction. The most obvious feature of difference is, that the capsules of this species are unwrinkled, though downy, whereas those of the former species are transversely wrinkled. The young botanist is often perplexed by the general similarity of several of the Crane's-bills, which are, however, essentially distinct; and a remark made upon this tribe by Mr. Johns, in his "Flowers of the Field," is worthy of attention:—"Particular care," observes the author, "should be taken, when comparing specimens with their descriptions, to examine the root-leaves; for the stem-leaves vary on the same plants so as to defy description."

12. **Jagged-leaved Crane's-bill** (*G. dissèctum*). — Stems spreading, hairy; leaves roundish, hairy, variously divided into numerous jagged narrow segments; sepals with long awns; petals notched; capsules hairy, and slightly wrinkled; seeds dotted. Plant annual. The name of this Crane's-bill well describes one of its characters, for its leaves are very deeply cut or jagged. They are hairy, and not soft and downy, like some of those

of the former species. The flowers are on short stalks, so that, as Mr. Curtis remarks, they seem sitting among the leaves. They are rose-coloured, and may be found all the summer on hedge-banks, pastures, and waste places, where the soil is of gravel.

13. **Long-stalked Crane's-bill** (*G. columbínum*). — Stems spreading, hairy, with short hairs; leaves 5-lobed, the lobes cut into long, narrow, acute segments; flower-stalks very long; sepals with long awns; capsules smooth. Plant annual. This graceful plant is not very common, and its flowers at once distinguish it from all the rest of the species. These are in bloom from June to August, and are placed on slender stalks, often longer than one's finger, and hardly thicker than a packthread. The flower is larger than that of any of the four species last described, and is a rich, reddish, erect, purple bell, sometimes in fine specimens almost as large as that of the large stitchwort. The stem is procumbent, and the capsules have occasionally a few hairs scattered upon them, but are generally smooth.

2. Stork's-bill (*Eródium*).

1. **Hemlock Stork's-bill** (*E. cicutárium*). — Stems prostrate, hairy; stalks many-flowered; leaves pinnate; leaflets sessile, pinnatifid, and cut. Plant annual. This is a very pretty flower, and one also which is common on waste places. It grows very often near the sea, and in salt marshes. It might at first sight be taken for one of the crane's-bills, but no species of that genus has the pinnate leaves which characterize our present plant. Its flowers, which grow in umbels, are of a delicate lilac tint; and they are to be seen on the plant throughout the summer, but the petals are very frail, and easily scattered by the wind.

2 **Musky Stork's-bill** (*E. moschátum*).—Stems prostrate, hairy; stalks many-flowered; leaves pinnate; leaflets nearly sessile, and cut; perfect stamens, toothed at the base. Plant annual. This species is much larger and handsomer than the last, and its flowers are of deeper purple. Like the Hemlock Stork's-bill, it is common near the sea, and seems more luxuriant there than elsewhere. The foliage is deep green, somewhat clammy, and when passed through the hand leaves a pleasant musk-like odour, which the author has observed to be more powerful in the evening than during day, and which also seems stronger in the plant when cultivated, as it often is, in gardens. It grows in waste places, and flowers all the summer, but is not frequent. It is often called Heron's-bill. Its juice has sometimes been employed as an aromatic bitter.

Mr. Mallet, of Dublin, was apparently the first to give a full account of the curious movements of the seed-vessel of this plant, a peculiarity now well known to botanists. This gentleman, in 1836, observed in the Stork's-bill one of those wondrous and interesting modes of the dispersion of seeds which exhibit themselves variously in plants, and which are destined to make the surface of the earth a scene of beauty and grace, as well as to supply an abundant source of vegetable food to man and animals. It was on a cultivated plant of this species that Mr. Mallet made his observations; and having, as he said, looked into many books, and found no mention of the circumstance, he resolved to state his account of it in a scientific journal of that time.

1. DUSKY CRANES-BILL.
   Geranium phæum.
2. MEADOW CRANES-BILL.
   G. pratense.
3. MOUNTAIN CRANES-BILL.
   G. pyrenaicum.
4. DOVES-FOOT CRANES-BILL.
   G. molle.
5. SMALL-FLOWERED CRANES-BILL.
   G. pusillum.
6. LONG-STALKED CRANES-BILL.
   G. columbinum.

"Each seed, of which there are five to each flower," says the writer, "is inclosed in a carpel, attached by its upper extremity to a tail or awn, which possesses the most wonderful hygrometric sensibility, as, indeed, does every other part of the plant. These five awns lie in grooves in the receptacle of the flowers, and this receptacle is central to, and is the axis of, all parts of the flower and fruit. When the whole system has arrived at a certain point of aridity, the awns, which are provided with an exquisite power of torsion, twist themselves out from their grooves, and at the same moment a number of downy filaments, hidden in the back or inward face of the awns, bristle forth; they all together become now detached, and fall to the ground.

"But here they still continue to twist, and from the position in which they always lie, keep tumbling over and over, and thus receding from the parent plant, until at length they become perfect balloons, ready to be wafted away by every zephyr. But motive power has not ceased to this apparatus to the seeds when this has twisted itself into this balloon shape; the slightest hygrometric change produces motion either backwards or forwards in the awn, and the constant tendency of this motion is to screw the seed into the ground. Such is the shape and great sensibility of the awns, that they may be readily applied to form most delicate differential hygrometers, for which purpose I have used them."

Mr. Mallet, in recording his observations, has allowed his imagination to run somewhat in advance of facts; but, with the exception of the "balloon" simile, his remarks are very just.

Order XXI. BALSAMINEÆ—BALSAM TRIBE.

Flowers irregular; sepals 5, or appearing to be 4, by two of the upper or inner ones uniting into one, the lowest spurred and hooded; petals 5, but appearing to be only 2, by the union in pairs of the four side ones, and the fifth being wanting; stamens 5; filaments more or less united at the extremity; anthers 2-celled; ovary of 5 cells, alternating with the stamens; stigmas 5, almost sessile, either distinct or united; fruit a capsule, with 5 elastic valves and 5 cells, or succulent, and [illegible]ting; seeds 1, or many, suspended. The plants composing th[illegible] and herbaceous, with opposite and alternate leaves, [illegible]. They are natives of damp marshy places among bus[illegible]markable for any medicinal properties. They have all a cu[illegible]of projecting their seeds to a distance.

BALSAM (*Impátiens*).—Flowers of apparently 4 sepals, and 2 petals; capsule of 5 valves. Name signifying impatient, given from the sudden opening of the valves of the capsule when touched.

BALSAM (*Impátiens*).

Yellow Balsam, or Touch-me-not (*I. noli-me-tángere*).—Joints of the stem swollen; leaves egg-shaped, serrated and stalked; stalks 3 or 4-flowered; spur of the calyx loosely recurved, and entire at the point. Plant annual. This is very rare as a wild plant, growing in moist woods in North Wales, Westmoreland, and Ireland, and flowering in July. It has been found in the neighbourhood of Keswick, in Cumberland; by the side of Coniston

Lake, on the banks of Windermere, and is said to be plentiful by some little rills near Rydal Hall. It occurs, more rarely, on the sides of the Avon, near Salisbury, near Fountains Abbey, and in several other places both in England and Wales. The stem is about a foot high, round and succulent, and, like that of the garden Balsam, which belongs to the same genus, is very brittle. The flowers are large, and yellow, spotted with orange; and the foliage is so acrid as to be refused by all animals except the goat. Boerhaave considered the plant poisonous, and though it has been used medicinally, yet its use was generally considered by the medical profession as attended with danger. Its Latin name, *noli-me-tángere*, is significant of the manner in which its seed-vessel curls up its valves spirally at the slightest touch, jerking its contents into the face of him who bends over it. The leaves are expanded during the daytime, but hang drooping at night.

Professor Lindley accounts in the following manner for the action of the seed-vessels. The tissue of the valves consists of cellules gradually diminishing in size from the outside to the inside, the fluids of the outer cells being the densest. The latter by degrees empty the inner cells, and distend themselves so that the external tissue is disposed to expand, and the interna to contract, whenever anything occurs to disturb the force which keeps them straight. This at last happens by the disarticulation of the valves, the flower-stalk, and the axis, and then each valve rapidly rolls inwards with a spontaneous movement. M. Dutrochet proved that it was possible to produce this phenomenon by putting some fresh valves of this Balsam into sugar and water, which gradually emptied the external tissue, and after rendering the valves straight, finally curved them backwards.

The American Jewel-weed, *I. fulva*, has become naturalized on the banks of the Thames at Hampton Court, on the Wey near Guildford, and along the Grand Junction Canal. It has also appeared along the Clyde, and other places, its spread being very rapid, owing to the distance to which the spring-gun-like capsule discharges the large seeds. The spur of the calyx of this flower is notched and bent under so closely as to press against the sepals. The Garden Balsam is the *Impatiens balsamina;* it is a native of the East Indies, and [redacted] varieties of carnation or purplish blossoms studding their amber s[redacted]our most common garden annuals The seeds often surprise t[redacted]ely jerking out on some slight touch.

Order XXII. OXALIDEÆ.—WOOD-SORREL TRIBE.

Sepals 5, not falling off; petals 5, equal, often united at the base, twisted while in bud; stamens 10, the 5 outer ones shorter than the others; filaments generally combined at the base; ovary 3—5-celled; styles 3—5; capsule 3—5-celled, with as many, or twice as many valves; seeds few, inclosed in an elastic case, which curls back on the ripening of the fruit, and throws the seeds to a distance. The Order consists of herbaceous plants, or under shrubs, which are remarkable for the acidity of their foliage, and for their sensitiveness. Several are astringent, and their acid flavour has rendered many among them agreeable additions to soups, salads, and confectionery, as well as useful for medicinal and various economical purposes.

1. HEMLOCK STORKS BILL.
Erodium cicutarium
2. MUSKY S. B.
E. moschatum
3. SEA S. B.
E. maritimum
4. YELLOW BALSAM
Impatiens noli-me-tangere
5. JEWEL-WEED
I. fulva

Pl. 57.

Wood-sorrel (*Oxális*). — Sepals 5, united below; petals 5, often united below; stamens united by the base of their filaments; styles 5; capsules 5-celled, angular. Name from the Greek *oxys*, sharp or acid, from the acid nature of the leaves.

WOOD-SORREL (*Oxális*).

1. **Common Wood-sorrel** (*O. acetoséllа*).—Leaves all springing from the root, ternate, hairy; scape with 2 small bracts about the middle, single-flowered; root scaly. Perennial. There are few of our woodland flowers more beautiful than this, when, in May, its clear triple leaf is spreading around the trunks of the old trees. It might at first be taken for a mass of clover, but the foliage is both thinner and of brighter green than that of any of our species of trefoil, and the delicate white or lilac flower, veined with purple, stands up gracefully from among it. As Linnæus remarked of them, these pencilled bells close on the approach of rain; even when the weather changes in a moment from sunshine to shower, though they were before fully expanded, they are folded up immediately. The leaves are always closed at night, as well as before and during rain. They are said to shrink together, too, at a blow with a stick, and the seed-vessel partakes of the general sensibility of the plant. This, if ever so slightly touched, will open one of its valves, jerking out the seeds at the opening. "This," says Mr. Curtis, "is not owing to any elasticity in the capsule itself, which continues unchanged; the cause of this propulsion is a strong, white, shining arillus which covers the seed, and, bursting, by its elasticity throws the seed to a distance."

Many of the leaves of our common plants, especially such as are pinnate in form, close regularly at night, as well as before rain. Anyone who observes the foliage of a clover-field, or of the peas, vetches, or mountain-ash, will see how readily they are affected by the moisture of the atmosphere, or the approach of night. But we have not, in this country, any plant which can at all compare with the sensitive plants, the *Mimosas* of tropical regions, whose thousands of leaflets fold together at the slightest touch, so that the Indians may well call them *Dormideras*, or sleepy plants.

There are large tracts of country in hot and damp districts entirely covered with *Mimoscæ*, where the vibration caused by the galloping of a horse past them is sufficient to set the whole mass in motion. We know of no plant, however, truly wild in the British field or wood which would better deserve the name of Sensitive Plant than our woodland Sorrel; though the species termed *Oxalis stricta*, which can hardly be claimed as a truly wild flower, has even more sensibility. The whole family of the Wood-sorrels are remarkable in this respect. The leaves of the *Oxalis sensitiva* are well known to collapse on the slightest touch; and Professor Morren, of Liège, attributes to the *Oxalis stricta*, which is naturalized in the counties of Devon and Cornwall, the properties of the sensitive plants of the East. The excitability and spontaneous movements of the leaves of this species, which were accidentally observed by two of the pupils of this professor, in the Botanic Garden of Modena, were communicated to the Royal Academy at Brussels. Professor de Brognoli, in verifying some experiments which

had been made, found that the plant must be teased for a long time, as its movements are much slower than those of the *Mimosa*. This botanist believed, from various observations which he had made on sensitive plants, that heat was the principal agent in this phenomenon, as he observed that that most singular of plants, the moving saintfoin (*Hedysarum gyrans*), moved less during winter in hothouses. This writer considers that all the species of Oxalis are susceptible of contraction when irritated; but as a large number of the cultivated species are from the Cape of Good Hope, they show no effects from concussion in our atmosphere, whose greatest heat is never equal to that of Africa. Professor Morren furnished several interesting notes on this phenomenon, which subsequently led to a discovery of some analogy in structure between the leaves of the Wood-sorrels and those of the *Mimoseæ*, an analogy quite unexpected by botanists, but which subsequent observation has fully established. One very remarkable peculiarity belongs to the Wood-sorrels, which is, that M. de Candolle was never able to modify the closing of these leaves at night, as he did those of many plants, by the alternation of artificial light with darkness; whence he inferred that the folding up of the leaves, termed the sleep of plants, and their unfolding, or awaking to the light of day, were connected with a periodical disposition of motion inherent in the plant. In the case, however, of *Oxalis acetosella* the attitude of the sleeping leaf is at once assumed when bright sunshine suddenly falls upon it.

The irritability of various plants, and the nightly folding of many, has occupied the attention of botanists, from Linnæus to those of our own day, and anyone at all accustomed to observe the flowers, either of the garden or the country landscape, must have seen it. Plants possess three distinct kinds of irritability, namely, such as depend on atmospheric phenomena, spontaneous motions, and such contractions as are caused by the touch of other bodies. Our Wood-sorrel exhibits two of these influences, but we have scarcely any native plant which shows any great degree of spontaneous movement, except the *Oscillatorias*, which are weeds of our fresh or salt water, and whose thread-like forms twist about like worms, and move to a considerable distance from the spot on which they are laid. The moving saintfoin of the East Indies is the most remarkable of all plants for its perpetual restless movement by day and night.

The sleep of plants is not confined to the folding of their leaves. As twilight approaches, many flowers alter their position. Sometimes the leaves fold over the delicate petals, so as to shield them from nightly dews, or the hoar frosts of spring or chilly blasts of autumn. Many flowers close quite up during night. The daisies, which sprinkle our meadows, received their pretty name from their opening only to the morning light, and many, like Chaucer, mark them thus folded on the mead—

> "When that the sunne out of the south gan west,
> And that this floure gan close and gon to rest."

Flowers of the rayed form are peculiarly so affected, and are like "The marigold that goes to bed with the sun, and with him rises weeping."

Even the corn-field shows its sensitiveness to the approach of the shadows

of evening, and droops down its green or ripening ears to await the morn; while many a delicate cup and vase bend downwards, and drooping bells droop more and more as night comes on. There are flowers, however, which close even at noon, when the sun is shining down brightly upon them, and, like the goat's-beard of our field, excite our wonder by folding up at mid-day. This act has direct relation to the habits of the insects that fertilize it.

Even after various investigations and careful experiments, the folding up of plants presents phenomena for which we cannot account; and the closing up of the Wood-sorrel leaf at a touch is yet a wonder to thoughtful men. Miller tells of a Calabrian philosopher who became mad while considering the nature of sensitive plants; and were we not accustomed to observe to what singular opinions the transcendentalism pervading the German mind may sometimes lead, we might almost fancy that a similar occupation had similarly affected the mind of the botanist Von Martius. This philosopher, who published his views on the Soul of Plants, says, that in the more highly developed vegetable forms, phenomena occur which belong to animal life, so that a soul cannot be denied to vegetables. He ascribes to them "internal perceptions and ideas; a dark sensibility and consciousness; a sympathy, and, probably also, a kind of memory," though he says we are not to trace in them "a higher sense, understanding, or free-will." He describes the fraternity as governed by a soft and peaceful spirit. Erasmus Darwin, author of the "Botanic Garden," would have rejoiced in these opinions of Von Martius. Poets of all ages, ever ready to endow Nature with personal attributes and sympathies, have described flowers and trees as enjoying pleasing sensations. Wordsworth thus clothes in words his poetic fancy—

> "Through primrose tufts in that sweet bower
> The periwinkle trail'd its wreaths;
> And 'tis my faith, that ev'ry flower
> Enjoys the air it breathes."

So, too, in sweetest verse we have Walter Savage Landor saying—

> "And 'tis, and ever was my wish and way
> To let all flowers live freely, and all die
> Whene'er their genius bids their soul depart,
> Among their kindred to their native place:
> I never pluck the rose, the violet's head
> Hath shaken with my breath upon the bank,
> And not reproach'd me; the ever sacred cup
> Of the pure lily, hath between my hands
> Felt safe unsoil'd, nor lost one grain of gold."

But it is not poets or German philosophers alone who have persuaded themselves that trees and flowers shared the feelings of the animal kingdom. Erasmus believed that the tree felt the stroke of the woodman's axe; and, in later days, Sir J. E. Smith declared his opinion that plants received enjoyment from their existence.

The Wood-sorrel was formerly called Wood-sower, and also Wood-sour, and very acid indeed are its leaves. They contain pure oxalic acid, and were in former days compounded into a confection which was used medicinally, and termed *Conserva Luzula*. Twenty pounds of the leaves of Wood-sorrel yield

six pounds, from which two ounces six drachms of impure salt may be obtained; but as the great chemist Scheele discovered some years since that oxalic acid might be procured by acting on sugar with nitric acid, this less expensive process has superseded the extraction of the salt from the sorrel leaf. The expressed juice of the leaves, evaporated and set in a cool place, affords a crystalline salt, which may be used in any case in which vegetable acids would be serviceable. This is the salt of lemons sold by druggists for removing ink-spots and iron-mould from linen; though cream of tartar and sulphuric acid are often substituted for the genuine produce of the leaf.

Children in the country know well how agreeable to the palate are the fresh green leaves of the Wood-sorrel, and the flavour as well as the medical properties approach very nearly to those of the lemon. A small portion of this foliage may be eaten with advantage, as it is an excellent antiscorbutic; but children should not be allowed to eat it in large quantities.

The leaves of several of the species are used in America and other countries as a dietetic vegetable. Our plant, boiled in milk, was much recommended by the old herbalists to quench thirst, and serve as a "cordial to the heart"; and leaf, seed, root, and flower, were all considered as fitted to "refresh the overspent spirits with the violent fits of agues." The French call our plant *La Surelle*, and *La Petit Oseille de Bois;* and the Germans term it *Der Sauerklee*. We find an allusion to its triple clover-like leaf in its Dutch name of *Claverzuuring;* while the Italians and Spaniards still call it by a name by which it was in former days commonly known in England, *Alleyluya*. Gerarde says, "Apothecaries and herborists call it Alleyluya, or Cuckowe's meat, either because the cuckowe feedeth thereon, or by reason that it springeth forth and flowereth when the cuckowe singeth most; at which time also Alleyluya was wont to be sung in the churches." The plant evidently had some sacred allusion in Italy, as the Italian painters represented its trefoil leaf in their pictures of the Crucifixion. Gerarde remarks of this plant also that it was used as green sauce for fish, and tells us that the French called it *Pain de Cucu;* while he also adds as common names those of Sour Trefoil and Stubwort. The last was, doubtless, given from its frequent growth among underwood.

The root-stock of our Sorrel is very pretty; it is like a string of rounded beads, and we have sometimes found the knobs so firm and smooth, and of such deep red colour, as to resemble coral. The roots of some other species are large and edible, and the *Oxalis crenata* was, some years since, much recommended for extensive culture, in order that its tuberous roots might serve as a substitute for the potato, but it was not found to answer the expectations of the cultivator. The *Oxalis deppei* is reared for the culinary use of its roots, and is grown largely in Belgium, both for its roots and leaves, which are employed in cookery. Mr. Cockburn, gardener to the Earl of Mansfield, at Caen Wood, said of this Sorrel: "We have grown it for several years, and I am convinced that if a little attention is paid to its culture, it will be found useful in the months of October, November, and December; but it would require a longer season of fine weather than our climate affords to bring its tubers to perfect maturity." He adds, that eight or ten good tubers are sufficient for a dish, and that this plant would be no

small acquisition to a garden destined to supply a large family with vegetables during the winter season.

The beauty of the flowers of many of the Wood-sorrels has led to the culture by gardeners of nearly a hundred species. One of the prettiest and most early-blooming is the *Oxalis cernua*, the Drooping Wood-sorrel, which has bright yellow flowers, with a most delicious jessamine-like odour; though there is one disadvantage attending it as an ornamental plant, which is, that the flowers all remain closed, not only in wet and cloudy weather, but in any spot on which the sun is not shining in full power. The blossoms of our woodland species are much affected by light, never expanding on a dull day. They are produced in April; but Curtis remarked a circumstance respecting them which all of us who have watched this plant can verify. He says, "If attentively observed, it will be found to continue producing seed-vessels and seeds during the greatest part of the summer, without any appearance of expanded blossoms, which are only observable at one period of the year." Since Curtis' day it has been noted that several other plants—we have already mentioned the case of the violets—bear these never-opening or *cleistogamic* flowers, which unfailingly produce abundant seed, without insect aid or expenditure of flower-material.

Whether the leaf of the Wood-sorrel, or of one of the clovers, is the ancient "shamrog' of Ireland, is a question which has led to much learned disputation, and which will be noticed more fully when we reach the trefoils.

2. **Yellow Procumbent Wood-sorrel** (*O. corniculáta*). — Stem branched; branches prostrate; stalks usually 2-flowered; leaves ternate; stipules united to the base of the leaf-stalks. Plant annual. This species, which has small yellow flowers, is not nearly so elegant a plant as the Common Wood-sorrel. It is in flower from June to September, in shady woods in the south-west of England. Though so rare in Britain, it is a common flower in many countries of Europe, especially in the south, as in Spain and Italy. It is also found in Japan and Mexico; and in the latter country the flowers are much larger than in the English specimens. A yellow-flowered Sorrel, termed *Oxalis microphylla*, is very common in Australia. Mr. Backhouse says that it displays its lively blossoms in almost every grassy spot in the colony of Van Diemen's Land, and that its acid leaves resemble in form those of the clover. It is eaten in its fresh state by the natives to allay thirst; and when made into tarts, is scarcely inferior to the fruit of the barberry. This traveller also found a white-flowered Wood-sorrel, *O. lactea*, generally dispersed over the colony, but not growing anywhere in sufficient quantity to be of any service.

Oxalis stricta is a yellow-flowered species, and is said to be naturalized in gardens near Penzance, and in fields near Northam, in North Devon. It differs from *Oxalis corniculata* in its more upright and less branched stem, in the greater number of its leaves, which, in some specimens, surround the stem in a whorl; in its flowers growing in an umbel, and in the absence of stipules at the base of the leaf-stalks.

Sub-class II. CALYCIFLORÆ.

Sepals distinct, or united; petals distinct; stamens inserted on the calyx, or close to its base.

Order XXIII. CELASTRINEÆ—SPINDLE-TREE TRIBE.

Calyx 4—5-lobed, on a fleshy disk, lobes in bud overlapping each other; petals equal in number to calyx-lobes; stamens equal in number to the petals, and alternate with them; ovary wholly or partly sunk in the disk, 2—5-celled; fruit either a capsule of 2—5 cells opening with valves, or berry-like; seeds often enveloped in a distinct covering called an arillus. This Order consists of a large number of trees and shrubs, which are natives of the warmer parts of Europe, North America, and Asia, but are more abundant beyond the Tropics than within them. Many are found at the Cape of Good Hope; they also occur in Chili, Peru, and New Holland. They are mostly of an acrid nature.

1. SPINDLE-TREE (*Euónymus*).—Capsule 3—5-angled, with 3—5 cells and valves; seeds solitary in each cell, coated with a fleshy arillus. Name from *Euónymé*, the mother of the Furies, on account of the noxious properties of the fruit.

2. BLADDER-NUT (*Staphyléa*).—Petals erect during flowering; capsule membranaceous, and like a bladder. Name from the Greek *staphyle*, a bunch of grapes.

1. SPINDLE-TREE (*Euónymus*).

Common Spindle-tree (*E. européus*).—Petals usually 4, oblong, acute; stamens usually 4; branches angular, smooth; leaves broadly lanceolate, minutely serrated. Plant perennial. The berries, which hang among the branches of the trees in autumn, are very beautiful. The flat cluster of scarlet fruits on the cotton or wayfaring-tree, gradually becoming of purplish black, the clear cornelian red berries of the guelder-rose, the scarlet hips and haws, the red round berries of the bryony, and the coral groups of the plant called red-berried bryony, the purple clusters of the dog-wood, are all very attractive objects at a season when flowers have almost passed away from the landscape. Now we see the autumnal fruits contrasting with such remnants of green or yellow foliage as may yet linger on the tree amid the bleak gusts of November, or glistening from among the large clumps of feathered seeds with which the clematis is garlanding the trees, or from among the ivy leaves which are winding on trunk or branch. But no native berries are more beautiful than those of the Spindle-tree; and this plant is much better known by these than by the small greenish flowers which it bears in May, and which are so like the leaves in hue, that they almost escape notice. In October and November the deeply-lobed capsules are of a rich carmine, and as they burst open they display the seeds, of a brilliant orange hue, lying within. Even in our woods they are among the brightest tinted things to be seen; and we are not surprised to find that in America a species of Spindle-tree adorns the woods with fruits so brilliant as to have

1 COMMON BLADDER NUT.
Staphylea pinnata.

2 SPINDLE TREE.
Euonymus europæus.

3 COMMON BUCKTHORN.
Rhamnus catharticus.

4 ALDER BUCKTHORN.
R. frangula.

gained for it the name of the Burning Bush. This is the *Euonymus americanus*.

Spindle-tree is the common name for the shrub whose dark green foliage so often thickens in our hedge-rows, and it has a name of the same meaning in many other countries. Thus it is the *Spindlebaum* of the Germans, the *Fusaggino* of the Italians, and the *Fusain* of the French. The latter people call it also *Bois à Lardoire;* and *Bonnet de prêtre* is another familiar name given, from its three-corned capsules; the Spaniards also commonly term it *Bonetero*. It was known to the old English herbalists chiefly by the name of Prickwood. The distaff and spindle are so little used in modern days, that it is no longer employed for making spindles, as it once was, though the Germans still use the tree for that purpose. Skewers are yet cut from its tough close-grained wood, which forms also a serviceable material to the watch and clock maker, who make of it the implements with which they clean their machinery. The musical instrument maker also uses the wood of the Spindle-tree; and in Ireland it is called Pegwood, because shoemakers cut their pegs from its branches. The burnt wood forms a good charcoal for the use of the artist.

This plant seldom attains in our hedges the size of a tree, and is rarely more than eight or ten feet in height, but in shrubberies it sometimes grows into a tall and handsome tree. The bark and leaves are very poisonous, and so also are the handsome and fetid berries, which cause sickness almost immediately on being swallowed. Most animals refuse to eat these berries, but they are sometimes used in dyeing, and afford a good yellow colour when boiled, without the admixture of any other ingredient, while, if mingled with alum, they yield a green dye, and a beautiful red tint is obtained from the seed-vessels.

The several species of Spindle-tree, which are very ornamental to our shrubberies, are the plants of other lands. The Hindoos make use of the inner bark of one of them (*Euonymus tingens*), which is of a beautiful yellow colour, to mark the tika on their foreheads. Another of the Spindle-tree tribe (*Catha edulis*) is the Kat or Khât of the Arabs. It seems to possess some stimulating properties. Forskhal says that the Arabs eat the green leaves with avidity, believing them to have the power of causing great watchfulness, so that a man may, after eating them, stand sentry all night without drowsiness. So efficacious do they imagine this plant to be against the plague, that they assert of a person wearing a small piece about him, that he may go with impunity among the infected, and that the plague will not enter a neighbourhood in which it is planted. Forskhal, however, did not consider that the flavour of the leaf indicated any virtue of this kind.

2. Bladder-nut (*Staphyléa*).

Common Bladder-nut (*S. pinnáta*).—Leaves pinnate; leaflets from 5 to 7; flowers in racemes; styles 2; capsules bladdery and membranaceous. Plant perennial. The yellowish-white flowers of this plant are to be seen in June in some thickets and hedges. It has no pretensions to be called a wild flower, for it is scarcely even naturalized, and custom alone sanctions its admission into a list of British plants. It occurs in Yorkshire,

and about Ashford, in Kent. It is a native of Eastern Europe, and is an ornamental, hardy, shrubby plant, often cultivated in gardens for its singularity rather than its beauty. Its bony polished seeds are used in some countries for rosaries; they are bitter, but are eaten on the Continent by poor people, and by children. Gerarde says, that when first tasted they are sweet; but that this agreeable flavour becomes afterwards nauseous.

Order XXIV. RHAMNEÆ—BUCKTHORN TRIBE.

Calyx 4—5-cleft, valvate when in bud; petals 4—5, inserted on the upper part of the calyx-tube; stamens 4—5, opposite the petals; ovary superior, or half superior, 2—4-celled, surrounded by a fleshy disk; fruit either fleshy, and not bursting, or dry, and opening in three divisions; seeds several. This order consists of trees and shrubs, having thorns, simple leaves, minute stipules, and small greenish flowers. They are found in almost all parts of the world, except the Arctic zone.

Some very interesting plants, both of Scripture and classic writers, are contained in this order. The *Zizyphus spina-Christi* is believed, by Hasselquist and some other botanists, to be the plant of which the crown of thorns was made which was placed in mockery on our Saviour's brow. Other writers consider the *Paliurus aculeatus* to be the true Christ's thorn. Both are prickly shrubs common in the East, and both bear eatable fruits. The fruit of the latter resembles a head with a broad-brimmed hat, and the plant is hence called *Porte chapeau*. They are sold in the markets of Constantinople, and the hakims, or native doctors, prescribe them in many complaints. This is one of the commonest thorns of the hedges and thickets in many parts of Asia, forming an almost impenetrable hedge.

The Jujube, which is a favourite sweetmeat in Italy and Spain, is the fruit of some plants of this order, *Zizyphus jujuba*, and *Zizyphus vulgaris*. The Turks plant the trees before their coffee-houses for the sake both of the fruit and shadow.

The celebrated Lotus of Homer, the plant which afforded food to the ancient *Lotóphagi*, or Lotus-eaters, is the *Zizyphus lotus* of the botanist. It is not so confined in its distribution as the Greeks imagined it to be, but grows wild in Persia, the interior of Africa, and on the sea-coast near Tunis. The fruits are eaten wherever they are found, and are sold in the markets of Barbary; but, we need hardly say, they have none of those effects which Homer describes as in his days following their use:—

> "The trees around them all their food produce,
> Lotos, the name divine, nectareous juice;
> Thence called Lotophagi, which whoso tastes
> Insatiate riots in their sweet repasts;
> Nor other home, nor other care intends,
> But quits his house, his country, and his friends."

Mungo Park states that this fruit is converted by the natives of Africa into a sort of bread, by first exposing it to the sun, and afterwards pounding it in a mortar to separate the farinaceous portion from the stone; and that a kind of gruel made from it forms, for a large part of the year, the common

breakfast of the majority of the people in many parts of Ludamar. A wine is also expressed from it, which has, by some writers, been thought to be the Nepenthes of Homer.

BUCKTHORN (*Rhámnus*).—Calyx cup-like, 4—5-cleft; petals 4—5, sometimes wanting; stamens 4—5, inserted with the petals into the throat of the calyx; berry 2—4-celled. Name from the Greek *rhamnos*, a branch.

BUCKTHORN (*Rhámnus*).

1. **Common Buckthorn** (*R. cathárticus*). — Branches with terminal thorns; flowers 4-cleft; stamens and pistils on separate plants; leaves egg-shaped, sharply serrated; berry 4-seeded. Plant perennial. This Buckthorn is a spreading shrub in woods, hedges, and thickets, where it is not uncommon. It is very densely branched, thus well meriting its name. Professor Burnett remarks of this:—"Rhamnus is taken from the Greek *rhamnos; ramus, rame*, and the obsolete *reim*, being fancied to be the descendants of an old word *ram*, a branch; and Rheims, which is but a slight variation of reim, bears two branches intertwined as the arms of the town." The French call the Buckthorn *Le Nerprun*, and its German name, *Der Kreuzdorn*, refers to its thorny nature. This shrub is from six to ten feet in height, and its leaves are glossy and of dark green hue, strongly marked with from four to six lateral veins. The flowers, which appear in May, are small and green, and grow in dense clusters; they are succeeded by purple berries. These berries have very powerful properties, and were formerly much used medicinally, but are not now considered a safe remedy.

The berries, when thus employed, were made into a syrup with spices, but their use produced an intolerable thirst. They are still used by dyers, and in making colours for artists. Their juice, before ripening, is of the colour of saffron, and these fruits are sold in that state under the name of French berries; and those of another species of Buckthorn (*Rhamnus clusii*) are called by the druggist Avignon berries. The juice of the berries of our common Buckthorn, in their ripened condition, thickened with gum-arabic and other ingredients, forms the *Vert de vessie*, or sap green, used by painters, and often, also, for staining maps and papers; but if the berries are gathered very late in the season, their juice is of purple colour. The bark affords a good yellow dye. When this thorny shrub is in full berry, it is a very pretty object.

2. **Alder Buckthorn** (*R. frángula*).—Branches thornless; flowers 5-cleft, all perfect; leaves entire, smooth; berry 2-seeded. Plant perennial. The leaves without serratures, and the branches without thorns, enable us at once to distinguish this from the last species. It grows in woods and thickets, bearing its inconspicuous green blossoms in May. The foliage is not very abundant; it is dark green, glossy, and strongly veined; the stem is slender, and of purplish-brown hue, and the deep purple berries are about as large as currants. Its medicinal properties are similar to those of the Common Buckthorn, and like that, its bark affords a good dye. A very fine yellow colour may, indeed, be procured in greater or less degree from all the species of *Rhamnus*, some of the shrubs of which are natives of the southern countries

of Europe, and the northern rocky coasts of Africa; and these afford a richer colour than either of our own kinds.

Evelyn remarks of our ornamental evergreen shrub (*Rhamnus alaternus*), that its "honey-breathing blossoms afford a marvellous relief to bees," as they open in early spring ere flowers are numerous. The same praise might be awarded to the flowers of our Alder Buckthorn, which are particularly grateful to these insects. Charcoal made from the wood of this tree is considered of much value in the manufacture of gunpowder. Goats eat the leaves voraciously. The shrub is from six to ten feet high.

Order XXV. LEGUMINOSÆ—PEA AND BEAN TRIBE.

Calyx 5-cleft, with the odd lobe in front; petals very unequal, 5, and papilionaceous; stamens 10, their filaments either uniting into a tube, or forming two sets of 9 and 1; ovary, style, and stigma, single; seed-vessel a 2-valved, sometimes imperfectly-jointed pod, or legume; seeds on the upper seam of the pod-valves; leaves alternate, mostly compound and pinnated, having stipules, and often with tendrils. This is a very large and important Order of plants, and one with which all are familiar. The butterfly-shaped blossoms characterize a large number, and, with a few exceptions, they have pods and pinnate leaves. Four thousand seven hundred species of this Order have been described by botanists, varying from small herbaceous plants, like our Vetches, to trees like the Laburnums and Robinias of our shrubberies, or those immense Locust-trees, whose trunks are so large that fifteen Indians with outstretched arms cannot encompass one of them. Many are highly ornamental to our gardens; such are the Sweet-peas, Lupins, Milk-vetches, the Coronillas, and a variety of flowers; and the descriptions given by travellers of the forests of other lands have made us familiar with such plants as the magnificent Coral-trees, whose crimson flowers climb to the top of the highest trees; with the Bauhinias, whose snake-like stems are festooned with richest blossoms; and with the airy foliage and golden bloom of the Mimosas, which cast a charm over many a barren spot. But our own landscape owes much of its summer beauty to leguminous plants. The golden Broom and prickly Gorse, the tangling Vetches, the ruddy Clover, the crimson Saintfoin, and the yellow lotus, contribute, with many more, to the grace and loveliness of our rural scenery. The field of Beans sends its fragrance afar, and those of Tare and Lucerne wave before the summer gale, yielding their foliage to the cattle, and giving seeds to the wild birds.

Very valuable products of commerce are furnished by the leguminous tribe. The Indigo (*Indigofera tinctoria*) is grown largely, both in the East and West Indies, for the use of the dyer. The Liquorice (*Glycyrrhiza*) is much cultivated in Spain, whence we derive our largest quantity. It has also been grown in the neighbourhood of London, and was formerly cultivated at Pontefract, in Yorkshire. Stow mentions that the planting and growth of "Licorish" began about the first year of Elizabeth's reign. One hundred weight of the root will afford twenty-eight pounds of the extract commonly called Spanish liquorice, which is used in lozenges and pectoral medicines, as well as by the brewers of porter.

The Peas, Beans, Scarlet Runners, and other plants which supply our tables, need hardly be named as leguminous plants; their pods at once declare it. Some foreign leguminous plants have their pods somewhat in the shape of a drupe; others retain the pod, but have not the papilionaceous flowers. Not so with our native species; they have all the butterfly-shaped blossoms, and, except that their pods are occasionally, as in the Bird's-foot, jointed, or as in the Medick, spirally twisted, there is little variation in their characteristic features. They are mostly herbaceous, the Broom and Furze being the only British leguminous plants which are shrubby. The Order is divided into several groups.

Group I. THE LOTUS GROUP (*Loteæ*).

Legume not jointed; leaves simple, of 3 leaflets, or pinnate, with an odd leaflet.

* *Leaves simple, or of* 3 *leaflets; stamens all united by their filaments.*

1. FURZE (*Úlex*).—Calyx of 2 lips, with 2 minute bracts at the base; legume swollen, few-seeded, scarcely longer than the calyx. Name from the Celtic *ec* or *ac*, a sharp point.

2. GREEN-WEED (*Genísta*).—Calyx 2-lipped, the upper lip 2-cleft, the lower with 3 teeth; standard oblong; style awl-shaped; legume swollen, or flat. Name from the Celtic *gen*, a shrub.

3. BROOM (*Sarothámnus*).—Calyx 2-lipped, the upper lip with 2, the lower with 3 teeth; standard broadly ovate; style thickened upwards; legume flat, many-seeded. Name, from *saroo*, to sweep, and *thamnos*, a shrub.

4. REST-HARROW (*Onónis*).—Calyx 5-cleft, with very narrow segments; keel beaked; style thread-like; legume swollen, few-seeded. Name from the Greek *onos*, an ass, because eaten by that animal.

* * *Leaves of* 3 *leaflets; stamens in* 2 *sets of* 9 *and* 1.

5. MEDICK (*Medicágo*).—Legume sickle-shaped, or spirally twisted. Name of Greek origin, signifying that some species was brought from Media.

6. MELILOT (*Melilótus*).—Calyx with 5 nearly equal teeth; petals distinct, soon falling off; legume of few seeds, longer than the calyx. Name from *mel*, honey, and *lotus*, the plant of that name.

7. FENUGREEK (*Trigonélla*).—Calyx 5-toothed, teeth nearly equal; petals distinct; legume straight, or slightly curved, many-seeded, and twice as long as the calyx. Name from the Greek *treis*, three, and *gonia*, an angle, from the triangular appearance of its corolla.

8. TREFOIL (*Trifólium*).—Calyx with 5 unequal teeth; petals combined by their claws, and persistent; legume of few seeds, concealed in the calyx. Name from *tria*, three, and *folium*, a leaf.

9. BIRD'S-FOOT TREFOIL (*Lótus*).—Calyx with 5 nearly equal teeth; legume cylindrical, many-seeded, and imperfectly many-celled. Name from the Greek *lotos*.

* * * *Leaves pinnate, with a terminal leaflet.*

10. LADY'S FINGERS (*Anthýllis*).—Stamens all united by their filaments; calyx inflated, 5-toothed; legume enclosed in the calyx. Name from the Greek *anthos*, a flower, and *ioulos*, down, from the downy calyx.

11. OXYTROPIS.—Stamens in 2 sets, 9 and 1; keel of the corolla pointed; legume more or less perfectly 2-celled. Name from the Greek *oxys*, sharp, and *tropis*, a keel.

12. MILK-VETCH (*Astrágalus*).—Stamens in 2 sets, 9 and 1; keel of the corolla blunt; legume more or less perfectly 2-celled. Name from the Greek *astrágalos*, a pastern bone, from the knotted form of the root of one of the species.

Group II. THE VETCH GROUP (*Vicieæ*).

Legume not jointed; stamens in 2 sets, 9 and 1; leaves pinnate, terminating in a tendril, or short point.

13. VETCH (*Vícia*).—Calyx 5-cleft; style thread-like, with a small tuft of down beneath the stigma; leaves with tendrils. Name from the Celtic *gwig*.

14. VETCHLING (*Láthyrus*).—Calyx 5-cleft; style flattened on the upper side, downy beneath the stigma; leaves with tendrils, except in *Lathyrus nissolia*. Name from the Greek *lathyros*, a plant so called.

15. BITTER-VETCH (*Órobus*).—Calyx 5-cleft, swollen at the base, oblique at the mouth, its upper segments deeper and shorter; style flattened on the upper side, downy beneath the stigma; leaves ending in a short point. Name from the Greek *oro*, to stimulate, and *bous*, an ox, from its nutritious properties.

Group III. THE JOINT-VETCH GROUP (*Hedysareæ*).

Legume divided into 1-seeded joints, or cells; leaves pinnate, with an odd leaflet.

* *Flowers simple, in umbels.*

16. BIRD'S-FOOT (*Ornithopus*)—Legume curved, divided into many equal-sided joints, each of which contains a seed; keel small, obtuse. Name from the Greek *ornis*, a bird, and *pous*, a foot, from the form of the seed-vessel.

17. JOINT-VETCH (*Arthrolóbium*).—Calyx tubular; keel small, blunt; legume curved, jointed. Name from *arthros*, a joint, and *lobos*, a pod, from its jointed seed-vessels.

18. HORSESHOE-VETCH (*Hippocrépis*).—Legume composed of numerous crescent-shaped joints, so that each legume looks like a series of horseshoes. Name from the Greek *hippos*, a horse, and *crepis*, a shoe.

* * *Flowers in racemes.*

19. SAINTFOIN (*Onóbrychis*).—Legume straight, 1-celled, 1-seeded, not opening, the lower edge fringed, or winged. Name from the Greek *onos*, an ass, and *brycho*, to bray, from the notion that its scent excites braying.

1. FURZE (*Úlex*).

1. **Common Furze, Gorse, or Whin** (*U. européus*).—Calyx somewhat hairy, with slightly spreading hairs; bracts large, egg-shaped, not adhering closely to the calyx; wings longer than the keel; leaves few and narrow. Plant perennial. To those who often wander over the heath-lands of England no description of the prickly Furze is needed; but it is not so common in all parts of the United Kingdom, large heathy tracts in the

Highlands of Scotland being often without a bush of this plant, though its golden blooms enliven other portions of those regions. The Furze-shrub is usually about three or four feet high, but in some sheltered situations it grows to the height of fifteen, or even eighteen feet; and its beautiful yellow flowers glow on the dark green stems, during the summer months, in profusion, beginning to deck the shrub in lesser number as early as February. Indeed, there is no season of the year in which we might not find a Furze-branch adorned with flowers; and its perpetual bloom is alluded to in more than one of our familiar English country proverbs. In summer, when it contrasts with the purple heath and ling, and shadows the beautiful harebells, few plants are more attractive. Hardy as the shrub seems on our open heaths, exposed to the coldest winds which sweep among the boughs, yet it is affected by climate more than some plants which we usually regard as tender. Both heat and severe cold are unfavourable to it; and while, on the one hand, it rarely grows wild farther south than Provence, it is unknown in the north of Europe, except as a cultivated plant. In Sweden and Russia it is kept in the greenhouse, and Gerarde relates of it, in his day, that about Dantzic, Brunswick, and Poland, not a branch of it was growing, except some few plants and seeds which he had sent thither, and which "were most curiously kept in their fairest gardens." The delight of Dillenius on seeing it in profusion on the English common, and the rapture of Linnæus, when he knelt on the sod thanking God for its loveliness, can be well understood by the lover of flowers. Mary Isabella Tomkins, in a little poem, written for this volume, refers to the emotion experienced on this occasion by the great Swedish botanist:—

"A strong man kneeling, and in tears,
Beneath June's azure sky,
Strange is it, strange, when joy appears
Grief's outward form so nigh!
Is it some exile who hath found
Again his native shore?
A stranger he—this heathy ground
He never trod before.

"Is it a pilgrim who hath sought
Some deeply hallow'd spot,
And sunk, o'erpower'd at the thought
Of faith that dieth not?
Is it a warrior on the plain
Where meeting myriads fell?
No, here the only purple stain
Is of the heather-bell.

"No; none of these—the naturalist
By his true heart impell'd,
Could not this meed of praise resist
For what he then beheld;
An open heath, where thick was spread
The Gorse of golden hue,
With heavy perfume round it shed
That well the wild-bee knew.

"And he that wept gave thanks to God
This glorious sight to greet,
And sank upon the thymy sod
That spread beneath his feet;
He who had scann'd wide Nature's page,
With loving eyes, and keen,
Had yet attain'd to middle age
Before that sight was seen:

"The thanks Linnæus gave that day,
I also would repeat,
When these gold blooms in rich array
On the rough heath I greet."

The Furze-bush is sometimes planted for hedges; and the poor in the neighbourhood of a common frequently use it for fuel. In places where coals are very expensive and peat rare, it has even been cultivated for that purpose. It gives a good degree of heat while burning. It is, in villages, esteemed a valuable remedy for jaundice, but probably this is owing to the colour of its flowers, many yellow objects, as oranges, yolk of eggs, etc.,

being popularly considered as cures for that malady. Many animals eat the young tops as food, and its seeds afford a good store for the birds. In autumn, when these are quite ripe, we hear their pods crackling, as they open to discharge their contents, sometimes making a loud report, and mingling with the gentle waving of the trees, and the singing of birds, the sounds seem sweet and musical to the wanderer on the heath, over

> "Moors where hares abound,
> While throbbing Furzes heart-struck burst their pods,
> Scattering ripe seeds amidst the moss around."

The plant is on some spots much entangled with the pink threads of the parasitic dodder, which form an entangling mass about its branches.

The French call the Furze *Ajonc* or *Jonc marin*, the latter name alluding to its growth near the sea, for the bush thrives well on cliffs, or other rocky soils, visited by the sea-breeze. It has been found in Devonshire with double blossoms, the variety of which is now so generally cultivated for the sake of its gorgeous masses of golden blossoms. It is the only papilionaceous plant which is known to have double flowers. The variety called Irish Whin is also a frequent shrub in gardens and nurseries. Our Furze is *Der Europäische Stechginster* in Germany, and it is the *Heybrem* of the Dutch.

2. **Dwarf Furze** (*Ulex nánus*).—Calyx downy, with the hairs lying close to the surface; bracts small; wings about as long as the keel. Plant perennial. This species, which is altogether smaller than the other, begins to flower in July, and remains in blossom till November or December. It has much of the general aspect of the Common Whin, though essentially different from it, its chief characteristics being its minute and scarcely perceptible bracts, and its shorter and more spreading wings. It differs also in not throwing its seeds out of the pod immediately upon ripening, as they remain closed on the shrub long after being fully matured. This species is from one to three feet high, and grows on many English and Irish heaths, especially in mountainous districts, and on some few Scottish lands.

2. Green-weed (*Genista*).

1. **Woad-waxen, Dyer's-whin, Dyer's-weed,** or **Green-weed** (*G. tinctória*).—Stems and branches without thorns; leaves narrow, acute, nearly smooth; flowers in clusters; legumes flattened, smooth. Plant perennial. This low shrub is frequent in pastures, thickets, and field-borders of England, especially where the soil is of clay, but it is rare in Scotland and Ireland. It is about one or two feet high, its leaves of very dark but rich green hue, and its pale yellow flowers, which expand during July and August, are on short stalks. The milk of cows feeding on this plant is said to acquire a bitter flavour, rendering the butter and cheese made from it very unpalatable. A decoction of the seeds was formerly used medicinally, and the ashes of the burnt twigs are considered a valuable remedy in some diseases. The latter medicine is prized in the Ukraine as a cure for canine madness, but its reputation for this malady cannot be regarded as established. Both the English and Latin names of the plant refer to its use by dyers, for its young tops have long been employed to give a yellow colour to yarn. Mr.

1. COMMON FURZE
Ulex europeus
2. DWARF FURZE
Ulex nanus
3. DYERS GREEN-WEED
Genista tinctoria
4. HAIRY GREEN-WEED
G. pilosa
5. NEEDLE GREENWEED
G. anglica
6. BROOM
Sarothamnus scoparius
7. COMMON REST HARROW
Ononis arvensis
8. SMALL SPREADING REST-HARROW
O. reclinata
9. KIDNEY VETCH
Anthyllis vulneraria

Pl. 59.

Knapp, in his "Journal of a Naturalist," remarks:—"Our poorer people, a few years ago, used to collect it by cart-loads about the month of July, and the season of 'Woad-waxen' was a little harvest to them; but it interfered with our hay-making. Women could gain each about two shillings a-day, clear of all expenses, by gathering it; but they complained that it was a very hard and laborious occupation, the plant being drawn up by the roots, which were strongly interwoven in the soil. The dyer gave them eightpence for a hundred weight, but I fear the amount was greatly enhanced by the dishonest practice of watering the load for the specious purpose of keeping it green; and the old woad-waxers tell us that without the increase of weight which the water gave the article, they should have had but little reward for their labour. Greediness here, however, as in most other cases, ruined the trade; the plant became so injured and stinted by repeated pullings, as to be in these parts no longer an object worth seeking for; and our farmers rather discourage the practice, as the Green-weed preserves and shelters at its roots a considerable quantity of coarse herbage, which, in the winter and spring months, is of great importance to the young cattle browsing on the pastures." Cattle will not eat the plant itself, except when pressed by hunger.

2. **Hairy Green-weed** (*G. pilósa*).—Stems procumbent and thornless; leaves narrow, obtuse, the lower ones often inversely heart-shaped; flowers axillary, on short stalks; legumes downy. Plant perennial. This species, which is rare, is found on dry, sandy, and gravelly heaths. It grows about Bury, in Suffolk; near Malvern, in Worcestershire; near the Lizard, Cornwall; and in some other places, producing its small, bright yellow flowers in May, and again in September. Its low prostrate stems are much gnarled and branched, and its leaves are densely clothed on their under surfaces with silky hairs.

3. **Needle Green-weed**, or **Petty Whin** (*G. ánglica*).—Stems thorny, and leafless below; leaves narrow, smooth; legumes smooth, inflated. Plant perennial. This is not an uncommon plant on moist heaths and moors. Its flowers, which expand in May and June, are bright yellow, and grow in leafy clusters on the upper branches of the shrub. Its stem is about a foot high, very tough, and bearing at intervals groups of thorns.

Broom (*Sarothámnus*).

Common Broom (*S. scopárius*).—Branches angular, slender, and erect; leaves of 3 leaflets, stalked, upper ones simple; leaflets oblong; flowers shortly stalked. Plant perennial. A beautiful shrub is our Common Broom, with its thousands of golden flowers, gleaming like so many butterflies with expanded wings on the summer boughs, and wafting a delicious odour. The "bonnie Broom" has won the praise of many a poet, and gladdened many a heart full of poetry which it knew not how to express. Mary Howitt apostrophises it pleasantly:—

"Oh, the Broom, the bonny bonny Broom,
On my native hills it grows;
I had rather see the bonny Broom
Than the rarest flower that blows."

The usual heignt of the Broom is from three to six feet, but on some spots it grows much higher, and its stem becomes of considerable thickness. Mr. Johnston, in writing to his friend John Ray, describes one of these plants in his day. "Near Kendal," he says, "I saw to my great wonder a broom-tree, if I may so call it, adorned with very fine flowers, and its stem thicker than my leg; a very fair spectacle!" The plant grows well on dry hilly plains, and it is largely planted about Ghent, in order to improve the dry sandy soils, and hold them well together by its roots. Several of the species are serviceable in this respect, and the One-seeded Broom (*Genista monosperma*) is very valuable on the shores of Barbary, Egypt, Portugal, Spain, and some other countries, where it converts the barren soils into fragrant and beautiful spots like gardens. It spreads over most extensive districts, and is called by the Spaniards by its old Arabic name, *Rœtum*. Professor Burnett remarks, "Several other Genistæ are sand-fixing plants, and hence, perhaps, the final cause of their little importance to man, directly as food or medicine, may be perceived; as they thus escape his aggressions, and are allowed uninterruptedly to pursue their constant labours as Nature's pioneers, to the best advantage."

Bees are very fond of the broom flowers, but they get nothing but pollen for their pains, for the flower produces no honey. The young flower-buds of the plant, gathered just as they are becoming yellow, and pickled, make a good substitute for capers. The young shoots have from time immemorial been used by country people as a cure for dropsy, and Dr. Cullen highly recommends this decoction. Every part of the plant, seeds, leaves, flowers, root, had, according to the old herbalists, some peculiar virtues, and were praised in their quaint statements for "helping pains," "altering fits of the ague," and curing gout, and many an other ill; while an oil procured from the green stalks, when heated by the fire, was pronounced an infallible cure for the toothache, the malady which, according to Shakspere, not even the philosopher could endure patiently. The plant yields, when burnt, a good alkaline salt, and its name indicates one of its uses for domestic purposes. One of the old writers on plants says, "To spend time in writing a description of the plant is altogether needless, it being so generally used by all good housewives, almost throughout the land, to sweep their houses with, and therefore very well known to all sorts of people." The French also term it *Genêt à balai*. The wood, when old, furnishes to the cabinet-maker an excellent material for veneering, and the young boughs may be used in tanning leather. The branches have when bruised a disagreeable odour, which, Mr. Curtis remarks, is the cause probably why they are rejected by cattle. They have also an unpleasant and bitter flavour, but the goats browse freely upon the young shoots. This plant is believed to be the Cytisus of Virgil, and the genus was so called by Linnæus.

Willsford in his "Nature's Secrets" says, "The Broom having plenty of blossoms, or the Walnut-tree, is a signe of a fruitfull yeare of corne;" and he adds that great store of nuts and almonds, especially filberts, afford a like assurance.

The Broom, formerly called *Planta genista*, was the *Gen* of the Celts, and the *Genêt* of the French. It was the badge of a long race of British kings,

the Plantagenets. Geoffry Earl of Anjou, the father of Henry II., and the husband of Matilda, Empress of Germany, was in the habit of wearing a branch of this in his cap, or as an old historian says, "He commonly wore a broom in his bonnet." Some early and interesting association with the flower, doubtless, led to its place as a plume to the cap of this earl, and old legends tell that he first put it there on the day of battle, plucking the golden branch on his way when passing on to the scene of contest. His son Henry has been called the Royal Sprig of Genista, and the Broom was worn by all his descendants, down to the last of the Plantagenets, Richard III.

4. Rest-harrow (*Onónis*).

1. **Common Rest-harrow** (*O. arvénsis*). — Stem shrubby, branches hairy, often spinous; lower leaves ternate, leaflets oblong, flowers axillary; calyx much shorter than the corolla. Plant perennial. The Rest-harrow bears, throughout the summer, a number of rose-coloured flowers, much resembling the sweet-pea of the garden, though considerably smaller. The leaves of the plant are sometimes slightly notched, and somewhat viscid; and the flowers vary from a red or deep rose-colour, to a paler hue, and in some instances to white. This plant, which grows on field borders, where the soil is sandy, or on rocky dry places, is especially luxuriant near the sea. On the cliffs of Dover, its pretty flowers are most abundant from the end of May until September; and having there the full benefit of shelter from north winds, and receiving all the sunshine of a southern aspect, the plant may sometimes be found in blossom even at Christmas. It is so variable, that some writers consider that several forms included in one general name, should be regarded as so many distinct species. Professor Burnett remarks on this plant, that it has hitherto been merely regarded as a troublesome weed; but that its physiological history is replete with interest—an interest, however, which it shares with other thorny plants, the warriors of the vegetable world. From the works of this admirable writer, we may be permitted to make a long extract, the more especially as his writings are familiar to few save botanists.

"In barren, uncultivated tracts of heath or common land, thorny plants abound, *e.g.*, the sloe, the Rest-harrow, the hawthorn, the buckthorn, the cockspur thorn, and many others. These vegetables, when removed into gardens, and cultivated with care, lose all the thorns, which so thickly beset them when wild, and bear fruitful branches in their stead; becoming, as Linnæus expressed it, *tamed plants* (*Plantæ domitæ*), instead of the *Milites* or *warriors*, to use his language, that they were before. Wildenow was the first who explained the rationale of this metamorphosis, the first who showed that thorns were abortive buds—buds which a deficiency of nourishment prevented becoming developed into branches, and which, when the requisite supply of food is present, speedily evolve their latent leaves and flowers. But Wildenow did not perceive the beautiful adaptation of means to ends, which forms, in my opinion, by far the most interesting part of the phenomenon.

"In open, barren tracts of country, the very circumstance of the sterility of the soil must prevent the production of many plants; and of those which

grow, few will be enabled to perfect many seeds. It is necessary, therefore, to protect such as are produced, from extermination by the browsing of cattle; otherwise, not only would the progeny be cancelled, but also the present generation cut off. And what more beautiful and simple expedient could have been devised, than ordaining that the very barrenness of the soil, which precludes the abundant generation by seed, should at the very same time, and by the very same means, render the abortive buds (abortive for the production of fruit) a defensive armour to protect the individual plant, and to guard the scantier crop which the half-starved stem can bear?

"That such an armature is produced by the abortion, or partial development of buds and branches, there is abundant proof; for not only are thorns found in every stage, varying from their simple dormant or winter state, when, if opened, they contain the rudiments of leaves, through leaf-bearing spines to rigid thorns on the one hand, or leaf-clad branches on the other; but the very organs, *i.e.*, the buds, which, when the plant is half starved, are partly developed as spines, and part only as branches, become, when an abundant supply of nourishment is provided, altogether leafy branches; the buds have all been wholly developed, none have degenerated into thorns, and the plant has been tamed. The Rest-harrow is a familiar example immediately in point; for of it there are two well-known varieties, called *Ononis spinosa*, and *Ononis inermis*, from the circumstance of this being smooth and destitute of thorns, while that is covered with them."

This plant has the name of Rest-harrow, as well as its French name, *Arrête bœuf*, because its long roots were formerly very troublesome in arresting the course of the plough or harrow in the corn-field. Cultivation, however, has greatly lessened its frequency in our fields. Its scientific name is given on account of the fondness of asses for this plant, for to this animal thorns and thistles seem alike agreeable. It had the old English name of Cammock, and in France it was also termed *La Bugrane*. It is *Die Haukechel* of the German, the *Stalkruid* of the Dutch, the *Ononide* of the Italian, and the *Detiene buey* of the Spaniard. The young sweet and succulent shoots may be used as a pickle, or as a culinary vegetable; and the long roots have the sweet flavour of liquorice, and are sucked both by children and country labourers to quench thirst. The author has often seen these roots thicker than a finger, and she is informed by Calder Campbell, that in Inverness the roots are often as large as a wrist, and that the children there sometimes suck them all day long. Old physicians considered that a use of the plant cured delirium, and some other maladies; and the Yellow Shrubby Rest-harrow of the south of Europe (*Ononis natrix*) is said by Pliny to be obnoxious to snakes, and to drive them away from the places where it grows.

2. **Small Spreading Rest-harrow** (*O. reclinata*).—Stems herbaceous, *spreading*, viscid and hairy; leaves all composed of three leaflets; stipules broadly egg-shaped; flowers solitary; calyx about as long as the corolla. Plant annual. This species is found growing on sea-cliffs in the countries of Devon and Wigton, also at Alderney, one of the Channel Isles. The chief place of its growth, as a wild plant, is in the fields of the south of Europe, and it was probably brought among ballast to the places here named.

1 YELLOW SICKLE MEDICK
Medicago falcata.

2 LUCERNE
M. sativa.

3 BLACK MEDICK
M. lupulina.

4 SPOTTED MEDICK
M. maculata.

5 LITTLE BUR MEDICK
M. minima.

6 RETICULATED MEDICK
M. denticulata.

7 YELLOW MELILOT
Melilotus altissima.

8 WHITE MELILOT
M. alba.

9 FIELD MELILOT
M. officinalis.

10 BIRDS FOOT FENUGREEK
Trigonella ornithopodioides.

5. Medick (*Medicágo*).

1. **Black Medick**, or **Nonsuch** (*M. lupulína*).—Leaflets inversely egg-shaped, finely toothed; stipules scarcely notched; flowers in dense oblong heads; legumes rugged, 1-seeded, kidney-shaped. Plant annual. This species, which is also called *Hop Medick*, may be very commonly seen flowering from May to September, both on waste and cultivated lands. It very much resembles the common yellow Trefoil; but it is distinguished from the Trefoils by its legume, which is not, like theirs, enclosed within the calyx. The legumes are black, not curved in a spiral form, as in some species, but rough, with veins running lengthwise. This has been considered a very useful plant in agriculture, and was once deemed the most valuable of all those plants known to farmers as "artificial grasses"; but its culture is now out of repute. The leaves are said to have some medicinal properties, and the roots are sometimes used for cleaning the teeth. The French term this *Medick Lupulina*; the Germans, *Hopfinluzerne*. It is the *Hoppige rupsclaver* of the Dutch. Country people of Norfolk call it Black Nonsuch and Shamrock.

2. **Spotted Medick** (*M. maculáta*).—Leaflets inversely heart-shaped; stipules toothed; flowers 2—4 together; legumes spirally twisted into a prickly ball; prickles curved. Plant annual. This is not an unfrequent species on grassy lands in the middle and south of England, where gravel prevails in the soil. It has small yellow flowers from June to September, and its leaves are rendered conspicuous by the little purple heart-shaped spot in the centre of each leaflet. The Rev. C. A. Johns says that this plant, which is in Cornwall called Spotted Clover, is there considered very injurious to the pasturage. The coiled and prickly seed-vessel is very curious, and many of the Medicks have seed-vessels still more so. Sheep will eat it readily enough early in the year, but when it begins to develop its prickly pods they refuse to touch it; so that a pasture containing much Spotted Medick becomes useless, and great effort is made to exterminate it. The Snail-shell Medick of the South of Europe (*Medicago scutellata*) has a large seed-vessel formed of numerous coils; and the still more singular legume of the Hedgehog Medick (*Medicago intertexta*) has led to the frequent culture of this plant in our gardens. The Moon Trefoil, or Tree Trefoil (*Medicago arborea*), which grows wild in Abruzzo, and many parts of the kingdom of Naples, is an exceedingly pretty shrub, with hoary leaves and yellow flowers, which continue long in bloom. The plant abounds in several of the islands of the Archipelago, and the Greek monks make the beads for their rosaries of its wood, which is, in the interior of the stem, hard, like ebony. Many writers consider this plant to be the Cytisus of Virgil, Columella, and other ancient writers on husbandry. It is the largest of all the Medicks, and frequently grows to the height of fifteen feet.

3. **Little Bur-medick** (*M. mínima*).—Leaflets inversely heart-shaped, downy; stipules very slightly toothed; flowers 2—4 together; legumes spirally twisted into a prickly ball; prickles hooked. Plant annual. This is a rare species, found in sandy fields in Cambridgeshire, on some parts of the coast of Suffolk, at Pegwell, near Ramsgate, in Kent, and a few other parts

of this kingdom. Its yellow flowers are produced from May to August. A variety occurs in which both leaves and stems are hoary.

4. **Toothed Medick** (*M. denticulâta*).—Leaflets inversely heart-shaped, nearly smooth; stipules jagged; flowers 2—4 together; legumes loosely spiral, flat, and prickled. Plant annual. This species, with its small yellow flowers, opening from May to July, is very rare. It is found occasionally in the Southern and Eastern counties of England. Its seed-vessel is different from that of any other of our wild kinds. It is broad, flat, and loosely spiral, beautifully netted with veins. In one variety the prickles are awl-shaped, and often curved; and in another they are small and straight.

5. **Purple Medick, or Lucerne** (*M. satîva*).—Stem usually erect; leaflets oblong and toothed; flowers somewhat racemed; flower-stalks generally shorter than the bracts; legumes downy and loosely spiral. Plant perennial. The purple, violet-coloured, or yellow flowers of this Medick are not uncommon in hedges, pastures, and field-borders, during June and July; but the plant is not truly wild. It has escaped from the field of Lucerne, which is an occasional object on our landscape. Columella and several Roman writers highly extolled this plant, generally agreeing that it was superior to clover as food for domestic animals; and its culture is of unknown antiquity in Spain, Italy, and the South of France. It is still grown to a great extent in Persia and Peru, and mown in both countries all the year round. British writers on agriculture mention it as occasionally grown in this kingdom in the olden times; but its culture was not general till about the middle of last century. Our name of Lucerne is derived from the patois of Languedoc, in which the plant is called *Lauserda*. The species is also known in France as *La Fois de Bourgogne;* and in Spain is called *Alfalfa*. It is a deeply-rooting plant; but being less hardy than red clover, and requiring longer time for its full growth, is less frequently sown by farmers. This plant is very widely diffused in Afghanistan, and grows in profusion with several of the Trefoils in the meadows near Cabul. These are rendered quite beautiful in the summer season by the abundance of the handsome clover called *Trifolium giganteum*, and which, with the Lucerne, furnishes abundant crops of hay to the people of the country.

6. **Yellow Sickle Medick** (*M. falcâta*).—Stem bending, slightly hairy; leaflets oblong, toothed; flowers numerous, in racemes; legume flat, downy, sickle-shaped, or once twisted. Plant perennial. This Medick is very similar to the Lucerne; but it is a larger plant, and its flowers are usually yellow, though occasionally violet-coloured. It is sometimes called Swiss Lucerne, because it is often cultivated in some poor soils in Switzerland. It is rare in our country, and is not truly wild, though found in some counties, on dry gravelly banks or on old walls. Its flowers appear in June and July.

6. *Melilôtus.*

1. **Common Yellow Melilot** (*M. altissima*).—Stems erect; leaflets narrow, inversely egg-shaped, and serrated; flowers in one-sided stalked racemes; petals equal in length; legumes two-seeded, wrinkled. Plant annual. This can hardly be called a common plant, though growing

abundantly in some places, as in several parts of Cambridgeshire. It has a herbaceous branched stem, two or three feet high, its pale yellow flowers are produced from June to August, and the seed vessels are long and large in proportion to the flowers. When growing, it has a strong and somewhat disagreeable odour, but while drying, its scent is very sweet, and like that of new-mown hay; nor is this scent lost for some years when the plant has been placed in the herbarium. The hay made from this Melilot is more fragrant than that usually made of the meadow grasses. This pleasant odour is owing to a volatile principle, called coumarin, which is well known as giving to the Tonka bean its powerful aroma, and which exists abundantly in the flower of this species, and of the blue Melilot. A distilled water made of the flowers, and slightly perfumed, was formerly sold by druggists in France, and praised for its medicinal virtues, though these must have been very slight. An infusion of the blossoms was in that country also much used as a remedy for ophthalmia, and the author saw the plant a few years since, hanging on strings to dry, in the shops at Paris, and was told that it was used for a variety of maladies. The plant is found by waysides and among bushes, and it may sometimes be seen growing plentifully in the midst of corn-fields. Bees are exceedingly fond of the flowers. This species is called by the French *Le Melilot commun*, and also, *Mirlilot;* by the Germans *Der gemeine Steinklege;* and by the Dutch, *Melote.* It was formerly very generally used as an ingredient in emollient fomentations. Though its flavour is somewhat bitter and disagreeable to our palates, yet it is liked by cattle, and horses are so fond of it that the Italians call the plant *Trifolium caballinum.* Ray mentions that it was at one time planted as food for cows and horses. The celebrated Gruyère cheese owes its flavour partly to the flower of this and the blue Melilot, both of which mingle with the herbs of the mountain pasturages, and are abundant in the valley of Gruyère. The seeds and flowers of these plants are bruised, and mixed with the curd before it is pressed.

2. **White Melilot** (*M. alba*).—Stem erect; legumes egg-shaped, one or two-seeded, blunt, and tipped with a short point; flowers loosely racemed; corolla twice as long as the calyx. Plant biennial. This is not truly wild, though occurring in many parts of England and Scotland. Its flowers are white, and appear in July and August. This species is often called *Medicago leucantha.*

3. **Field Medick** (*M. officinalis*).—Stem ascending, branched from the base; legumes egg-shaped, one or two-seeded, rugged, obtuse, and tipped with a sharp spine. Plant annual. This is a yellow-flowered species, found near Thetford and Cambridge in July and August, but not indigenous. It is easily known from the other species by its legumes, which are transversely plaited.

7. Fenugreek (*Trigonella*).

Bird's-foot Fenugreek (*T. ornithopodioides*). — Stems decumbent; flowers two or three together; legumes compressed, twice as long as the calyx, and having about eight seeds; leaflets inversely heart-shaped. Plant annual. This is a very little plant, and not a very common one, growing

in sandy and dry pastures and heaths, often in the neighbourhood of the sea, and bearing very small yellow flowers in June and July. The spreading stems are from two to five inches long, and the seed-pods are very large for the size of the plant. This is our only wild species, and is too small to be of any use; but a species of the south of Europe, which is very common on fields and waste places about Montpellier, the Common Fenugreek (*Trigonella fœnum-græcum*), was so called by the Romans from their having adopted from the Greeks the practice of cutting and drying it for fodder. This plant was formerly very extensively cultivated in Italy, and is still sown by farmers in the south of Europe. The seeds are farinaceous, slightly bitter, and of a strong and disagreeable odour. The species is thought, however, by Professor Burnett, to be the Hedysarum of Theophrastus and Dioscorides; the odour which we find so disgusting being then considered, as its name imports, a sweet perfume. An oil extracted from the seeds of this species was formerly used by the Hindoos to scent their unguents.

8. Trefoil (*Trifólium*).

* *Legumes with several seeds.*

1. **White** or **Dutch Clover** (*T. répens*).—Flowers in roundish heads, stalked, finally bent back; calyx-teeth unequal; legumes 4-seeded; stems creeping. Perennial. The Dutch Clover is too common on our meadows, and by our every country walk, to need minute description. Its white blossoms are to be seen from May till September, tinged sometimes with delicate pink, at others with chocolate colour. The flower is on a partial stalk, and when it fades this footstalk bends down, and the legumes droop among the brown withered corollas. The blossom has a sweet odour, which, however, is not so powerful as that of the Purple Clover. The leaflets have often a dark spot in the middle, and very generally a white line also, and their edges are slightly serrated.

This and the Purple Meadow Clover are most valuable fodder plants. They are commonly cultivated in this country for pasturage, and one acre of land sown with Clovers is found to give as much food to horses and cattle as would be yielded by three or four acres of land sown with grasses. Chalky soils are peculiarly favourable to their growth, and several of the Trefoils are found remarkably united with the superstratum of mountain lime. If lime is powdered and thrown upon the soil, a crop of White Clover will sometimes arise where it had not been previously cultivated or known to exist. Mr. Moore stated, some years since, to the Philosophical Society of Manchester, that wherever the brushwood of the lime district in Derbyshire is burnt down, the Common White Clover springs up; and that lime strewed over some chalk soils, in which Clover seeds had been lying dormant, had called them into action, and produced a luxuriant pasture; on the grass land around Stonehouse in Devon, Clover was produced by throwing over the land the crumbled soil of the harbour rock, which is of the substance commonly called Devonshire marble, and which is a species of mountain or primitive limestone.

It has been long a disputed point among botanists and antiquaries,

1. WHITE OR DUTCH CLOVER. Trifolium repens
2. SUBTERRANEAN TREFOIL. T. subterraneum
3. SULPHUR COLOURED T. T. ochroleucum
4. PURPLE C. T. pratense
5. ZIGZAG T. T. medium
6. TEASEL HEADED T. T. maritimum
7. CRIMSON T. T. incarnatum
8. STARRY HEADED T. T. stellatum
9. HARE'S FOOT T. T. arvense
10. SOFT KNOTTED T. T. striatum

Pl. 61.

whether the national badge of the Irish, the Shamrock, is the leaf of the wood-sorrel, or that of one of the Trefoils. The Shamrock has been worn by the Irish for many centuries on the seventeenth of March, which is the anniversary of their patron saint, St. Patrick. The original name of this missionary is said by Mr. Jones, in his "Historical Account of the Welsh Bards," to have been Maenwyn; his name of Patricius having been given by Pope Celestine, when he sent him to preach the Gospel to the pagan Irish. When this missionary landed at Wicklow, A.D. 433, the people were at first ready to stone him. He entreated a hearing, and, while stating to his audience the doctrine of the Holy Trinity, he is said to have plucked a Trefoil from the ground, and said, "Is it not as possible for the Father, Son, and Holy Ghost to be one, as for these three leaves to grow upon a single stalk?" The act and word were well adapted to fix the attention and convey the idea to an ignorant but imaginative people, and thus to fix on their memories the important truth of Revelation, though the solemn mystery itself can be explained by no earthly tongue, nor fully symbolized by any earthly emblem.

What this leaf may have been, this ancient Shamrog or Seamrog, learned men after all their researches cannot fully prove, and the same arguments addressed to different minds, have brought to one antiquary the conviction that it was the wood-sorrel, to another that it was a Clover leaf. The leaf of the White or Dutch Clover seems to be the plant often worn by the modern Irish, and Irish students at the colleges of Edinburgh have sometimes cultivated this Clover in little patches, that a leaf might adorn their hats; but many Irishmen gather indiscriminately a handful of the leaves of any species. M. Bicheno, who some years since investigated the subject very fully, believed that the original leaf was that of the wood-sorrel. He remarks, "The term Shamrock seems a general appellation for the Trefoils, or three-leaved plants. Gerarde says, 'The Meadow Trefoils are called in Ireland Shamrocks,' and I find the name so applied in other authors. The Irish names for *Trifolium repens*, are, Seamar-oge, Shamrog, and Shamrock. In Gaelic the name *Seamrog* is applied by Lightfoot to the *Trifolium repens;* while in the Gaelic Dictionary, published by the Gaelic Society, under the word *Seamrog*, many plants are mentioned to which the word is prefixed as a generic term; as *Seamrog chapuilli*, Purple Clover; *Seamrog chré*, small speedwell; *Seamrog m'huire*, pimpernel. I conclude from this that Shamrock is a generic word, common to the Gaelic and Irish languages, and consequently not limited to the *Trifolium repens*."

In Fynes Morison, a notice occurs so late as the year 1598, in which the "wilde Irish" are said to "willingly eat the hearbe Shamrocke, being of a sharp taste, which as they run and are chased to and fro, they snatche like beastes out of the ditches." M. Bicheno infers that this author alluded to the wood-sorrel, and the "sharp taste" would certainly indicate this herb, only that as wood-sorrel never grows in ditches, it is quite as likely to refer to the water-cress. The wood-sorrel is not now common in Ireland, but this author justly observes that it may in former years have been so, the woodlands of Ireland having now been so much cut down, partly by the natives to supply their wants, and partly also by the Government to prevent their

enemies from taking refuge in the wars; and with the woods would go the woodland sorrel.

We confess that we incline to the opinion that one of the Trefoils is the true Shamrock, nor do we believe it possible to infer which particular species was selected. Men of those days were no botanists; one triple leaf was the same to them as another; nor by the middle of March are the leaves of any of the Clovers sufficiently developed for any but an accurate observer to decide the species to which they belong. Wood-sorrel may or may not have been a common Irish plant, but Trefoil leaves abound by every wayside. Nor can we attach any importance to an argument inferring that the Shamrock was the wood-sorrel, because it was eaten, since the Clover leaves have, in various times and countries, been used as food; and a starving man would find as much nutriment in them as in the wood-sorrel. Whatever the plant might be, it appears to have been eaten. In Wyther's "Abuses stript and whipt," published in 1613, we find this couplet:—

> "And for my cloathing in a mantle go,
> And feed on Shamroots as the Irish doe;"

and Spenser, in his "View of the State of Ireland," published 1596, speaking of "these late warres of Mounster," says that it was before "a most rich and plentifull countrey, full of corne and cattle," but that the inhabitants were now reduced to so much distress, that if they found "a plot of water-cresses or Shamrocks, there they flocked as to a feast for the time."

Many of us have in childhood looked diligently among the grasses of the meadow to find "a four-leaved Shamrock," though we know from experience that such Shamrocks are not plentiful. The child, who hopes to gain good fortune by finding it, knows not that he is acting upon an old superstition. Melton in his "Astrologaster," says, that "If a man walking in the fields finds any four-leaved grass, he shall, in a short while after, finde some good thing." In Herrick's "Hesperides," too, we find a slight allusion to this:—

> "Glide by the ranks of virgins then and passe
> The shoures of roses, lucky four-leaved grasse;
> The while the crowds of younglings sing,
> And drown ye with a flourie spring."

Our fathers tell how the Clover "was not only good for cattle, but noisome to witches"; and in those dark days, when every lonely woman was deemed a witch, the Trefoil was prized as a protection, not alone by the peasant, but by the soldier and philosopher:—

> "Woe, woe to the wight, who meets the green knight,
> Except on his faulchion arm,
> Spell-proof, he bear, like the brave St. Clair,
> The holy Trefoil's charm."

We wonder not that its old associations endear to an imaginative and warm-hearted people, like the Irish, the badge of their nation. It is not difficult to sympathize with the feelings expressed by an Irish lady, in a little poem written on the Shamrock for this work:—

And yet no warrior cresset thou,
A higher, holier spell is thine;
Sign of her early faith, the Church
Still claims thee for her hallow'd shrine;
Symbol to her of mystic truth,
Link of the golden chain first given;
Dew-drop embosoming a star,
Silent, but eloquent of Heaven.

'Well may the child of Erin deem
His Shamrock precious in his eyes;
Its spell can wake the hidden spring,
Bid Hope from Memory arise;
And whisper that the 'Isle of Saints'
Shall know a purer sanctity,
When Glory shall illume the land,
And Truth shall make her children free."

The White Clover is very general throughout Europe, but is not so in North America. Mr. Lyell, who saw it growing in abundance near New Orleans, on the banks of the Mississippi, says, "Yet it is not a native of Louisiana, and some botanists doubt whether any of the English species, now growing wild in this State, are indigenous." The power of vegetating, after having many years existed in a dormant state, is not peculiar to the White Clover. Several seeds have been known to do so in a wonderful manner, and though the statement that wheat found enveloped in the mummy cases afterwards germinated is now known to be erroneous, yet some well-authenticated instances prove that seeds have a wondrous power of retaining their vitality. Tournefort has recorded a case in which beans that had been kept a hundred years grew when planted; and Wildenow mentions one of a sensitive plant, in which the seed had been kept sixty years. Mr. Babington related to the British Association an instance in which M. Fries, of Upsala, succeeded in growing a species of hawkweed (*Hieracium*), after it had been in a herbarium for fifty years. Dr. Cleghorn states, that after clearing or burning down the forests of India, there invariably springs up a new set of plants, which were not known there before, but the seeds of which must have been lying in the soil. So in Virginia, the thorn-apple is called "fireweed," because it rises on spots where the fire has levelled the forest trees. Professor Henslow, during the year 1850, planted several seeds which had been sent to the committee of the British Association appointed to report on this subject. Two plants of the leguminous tribe grew from seeds, one of which had been kept for seventeen, and the other for twenty years; and, after much examination of the subject, the Professor concludes, that the seeds of plants of this order have a greater power than others of retaining the germinating principle.

* * *Legumes one or two seeded; standard falling off, or remaining unaltered; calyx not inflated.*

2. **Common Purple** or **Red Clover** (*T. praténse*).—Flowers in dense roundish oblong heads; calyx hairy; its bristle-like divisions half as long as the corolla; stipules broad, terminating abruptly in a bristle-point; leaflets broad, oval, or inversely heart-shaped, notched or entire, often marked with a white crescent-shaped spot. Plant perennial. The field of Clover may

vie with the bean-field or the hop-garden in sweetness of odour. The plant flowers all the summer, and in June, when skies are bright, and its fragrance is most powerful, it is the resort of bees and butterflies innumerable. Pliny remarked how fond the bees were of this flower; and the modern bee-keeper may think that it is fortunate for him when the farmer in his neighbourhood sows his land with Clover. Everyone who in childhood has run about the meadows gathering flowers can tell how sweet a honey lurks within its petals; and we wonder not that our fathers called them honeysuckles; or, as in Shakspere's time, honey-stalks :—

"Give honey-stalks to sheep."

But though this clover is rich in honey, it is so carefully stored away that only the long-tongued humble-bees can reach it. Charles Darwin showed that a crop of Red Clover seeds could not be obtained in this country without the aid of the humble bees in fertilization; on the other hand, White Clover is fertilized almost entirely by hive bees.

In this country Clover is sown for the food of cattle, but in some other lands it is cultivated for other uses. Mr. Fortune remarks in his "Wanderings in China," that after the last crop of rice has been gathered in, the ground is immediately ploughed up, and prepared to receive certain hardy green crops, such as Clover, the oil plant, and other varieties of the cabbage tribe. "The Trefoil or Clover," says this writer, "is sown in ridges, to keep it above the level of the water, which often covers the valley during the winter months. When I first went to Chusan, and saw this plant cultivated so extensively in the fields, I was at a loss to know the use to which it was applied, for the Chinese have few cattle to feed, and these are easily supplied from the roadsides and uncultivated parts of the hills. On inquiry, I found that this crop was cultivated almost exclusively for manure. The large fresh Trefoil leaves are also picked and used as a vegetable by the natives."

The Clover field presents a singular appearance in the early morning, before the sun is fully risen, as well as at evening twilight. The leaves are all folded together, showing the pale green tint of their under surfaces, often well besprinkled with the pearls of dew. In wet weather the same appearance is presented by the plants. Pliny told how the Clover leaves were influenced by storms, and Willsford, in his "Nature's Secrets," says, "Trefoile or Claver grasse, against strong or tempestuous weather will seem rough, and the leaves of it stand and rise up as if it were afraid of an assault." The same author quaintly remarks, that the leaves of trees and plants in general will shake and tremble against a tempest more than ordinary; and that all tender buds, blossoms, and delicate flowers, against the incursion of a storm, "doe contract and withdraw themselves within their husks and leaves, whereby each may preserve itself from the injury of the weather;" and he adds, that "leaves in the wind, or down floating on the water, are signs of a tempest more than ordinarie."

This Clover is pretty general throughout Europe, as are most of the British Trefoils. It has been remarked, that in the distribution of the leguminous plants in the south of Europe, the Brooms have their maximum in Spain; that the Vetches increase in Greece; and that the various Trefoils

are most abundant in Italy. The species of the *Astragalus*, or Milk Vetch, first begin to preponderate in Asia Minor. The Trefoil is called *Trèfle* by the French, and *Der Klee* by the Germans. The old Anglo-Saxon word from which our modern Clover is derived, was *Cloefer*, from *Cleof-an*, to cleave, and refers to the cleft leaf. The Dutch still call it *Klaver*, and many of our writers of the sixteenth century call it Claver-grass, though Michael Drayton always calls it Clover :—

> "So that my poorest trash, which men call rush and reed,
> Doth like the penny grass or the pure Clover show."

Shakspere speaks of the

> "Freckled cowslip, burnet, and sweet Clover ;"

and few of us can see the Clover flower without the thought of some pleasant meadow land, in which we may, in other days, have seen it growing in all its ruddy beauty and sweetness :—

> "It doth remind me of an old low strain
> I used to sing in lap of summers dead,
> When I was but a child, and when we play'd
> Like April sunbeams, 'mong the summer flowers :
> Or rompèd in the dews with weak complaining lambs,
> Or sate in circles on the primrose knolls,
> Striving with eager, and palm-shaded eyes,
> 'Mid shouts and silver laughs, who first should catch
> The lark, a singing speck, go up the sky."

3. **Zigzag Clover** (*T. médium*).—Flowers on stalked loose round heads ; calyx-teeth, bristle-like, the two upper shortest ; stipules narrow, tapering to a point ; leaflets elliptical narrow ; stem zigzag. Plant perennial. This, though not an unfrequent species, is not so common as the Purple Clover, which it much resembles. It is, however, quite a distinct plant, and well marked by its very zigzag stem. It is also more slender, the heads of flowers larger, and of darker purple ; its leaflets and stipules narrower, and the former without any white spot. It is in flower from June to September in pastures, and though not so nutritious for cattle as is the Common Clover, yet it is better adapted for thriving in light soils. It has a similar sweet odour to that of the Meadow Clover, and resembles it in flavour.

4. **Sulphur-coloured Trefoil** (*T. ochroleúcum*).—Flowers in dense stalked, terminal heads, which are at first hemispherical, and afterwards egg-shaped ; calyx-teeth awl-shaped ; upper leaflets oblong, lower heart-shaped. Plant perennial. This species is by no means so generally diffused among our grassy places as is either of the foregoing, but it is common in the eastern counties of England, and especially on the clayey pastures of Norfolk and Suffolk. It grows in fields and by waysides, bearing, in July and August, flowers of a cream colour, more or less tinged with yellow, which turn to brown as they fade. The stem is a foot or more high, and the lower leaves are on long stalks.

5. **Hare's-foot Trefoil** (*T. arvénse*).—Flowers in terminal and axillary heads, covered with soft downy hairs ; calyx-teeth hairy, much longer than the corolla ; stem branched, erect ; leaflets lanceolate, blunt ; stipules egg-shaped, pointed. Plant annual. This is a very pretty Trefoil, its pale pink blossoms just peeping through the soft grey down which surrounds them,

and which well might remind us of the delicate fur on the hare's foot. It is very distinct from any other British species, and grows on a stem from six to twelve inches high. It thrives particularly well near the sea, and often forms large masses on dry pastures or corn-fields, or, as at Sandgate, Kent, on the base and sides of high banks overlooking the ocean. Its heads are like velvet to the touch, and when growing in any quantity the mass might convey the impression that it was composed of the downy balls which are the appendages to the seeds of some plant of the Composite order. As Mr. E. Gerard Smith has observed, in his "Flora of South Kent," that coast is very rich in Trefoils, "which are its prominent, though humble ornaments. Upon the sandy undercliff near Folkestone, they acquire an unusual size and perfection; and for these alone, not to mention the singular medicks, this place is well worth the visit of the botanist."

6. **Teasel-headed Clover** (*T. maritimum*).—Flowers in terminal roundish heads; calyx-teeth at first rigid, awl-shaped, and erect; the lower one much longer and broader than the rest, all of them spreading when in fruit; stipules very long, and awl-shaped. Plant annual. This is a rare species, found on some salt marshes between Gloucestershire, Somerset, and Lincolnshire, as well as near Kilbaric Church, in Ireland. It has small pink flowers, in June and July, on a spreading stem.

7. **Crimson Clover** (*T. incarnátum*).—Heads of flowers egg-shaped, stalked, solitary, and terminal; calyx hairy, the teeth somewhat awl-shaped, shorter than the corolla; stipules egg-shaped; leaflets inversely heart-shaped. Plant annual. This beautiful Crimson Clover is often planted in the garden as a border flower. It rarely adorns our fields or meadows; and in most places where it occurs, it is rather to be regarded as naturalized, than as truly wild. A variety, however, with light pink flowers, occurs on the Lizard Point, Cornwall, which is undoubtedly wild. This has been named *T. molinerii*. It flowers in June and July, and is common in the countries in the south of Europe.

8. **Starry-headed Trefoil** (*T. stellátum*).—Heads of flowers terminal, globose, stalked, and shaggy with long loose hair; calyx hairy, the teeth longer than the corolla, bristled, finally enlarging and spreading, its tube closed with hair; stipules broadly egg-shaped, ribbed, and roundly notched at the margin; leaflets inversely heart-shaped. Plant annual. One habitat only in England is known for this Trefoil. It grows in great abundance near Shoreham, in Sussex. It is a very singular and pretty plant, with very long calyxes, which at first hide the small cream-coloured corolla among their bristly teeth, but which afterwards spread out in a star-like form. It is in blossom from June to August. It is, probably, not truly indigenous.

9. **Soft Knotted Trefoil** (*T. striátum*).—Heads of flowers terminal and axillary, egg-shaped, and downy; calyx swelled when in fruit, very rigid, hairy, with straight but unequal small bristly teeth; leaflets inversely heart-shaped, or inversely egg-shaped; stipules egg-shaped, and tapering at the point. Plant annual. The small downy heads of this Trefoil grow among the grass of our dry fields and pastures, in June and July, especially near the sea; the blossoms are of reddish-purple, and the calyxes furrowed. It is a silky downy looking Clover, long hairs being more or less scattered

1. BOCCONES TREFOIL. T. bocconi
2. ROUGH RIGID T. T. scabrum
3. SMOOTH ROUND HEADED T. T. glomeratum
4. SUFFOCATED T. T. suffocatum
5. UPRIGHT R.H.T. T. strictum
6. STRAWBERRY HEADED T. T. fragiferum
7. REVERSED T. T. resupinatum
8. HOP T. T. procumbens
9. LESSER YELLOW T. T. minus
10. SLENDER YELLOW T. T. filiforme

Pl. 62.

over every part of it. The stem is from four to nine inches long. It is quite a common plant in England, less so in Scotland, and very rare in Ireland.

10. **Boccone's Trefoil** (*T. boccóni*).—Heads of flowers in pairs, roundish; calyx cylindrical in fruit, the teeth straight, unequal, awl-shaped; leaflets inversely egg-shaped, or narrowly lanceolate, toothed, smooth above; stipules oblong, with a long awl-shaped point. Plant annual. This very rare species was, until recently, believed to be a plant of southern Europe, and not indigenous on our shores; but it is now known to be truly wild in some dry places in Cornwall, as between the Lizard Point and Kynance Cove. Its stem is from two to four inches in height, and its pink and white flowers appear in July.

11. **Rough Rigid Trefoil** (*T. scábrum*).—Flowers in short prickly heads, terminal and axillary; calyx-teeth unequal, finally spreading; leaflets with very thick nerves; stems prostrate. Plant annual. This species often grows with the Soft Knotted Trefoil, on barren, chalky, or sandy fields, near the sea. It is a small spreading plant, producing its inconspicuous whitish flowers in June and July. It is remarkable for its prickly calyxes, especially when in fruit.

12. **Smooth Round-headed Trefoil** (*T. glomerátum*).—Heads of flowers terminal and axillary, sessile, roundish; calyx-teeth broad, very acute, finally turning downwards; leaflets inversely heart-shaped and toothed; stems prostrate. Plant annual. This, which is not a common Trefoil, is very similar in appearance to the last-described species, but its heads of flowers are rounder, and the teeth of its calyxes more spreading and leaf-like. It flowers in June, on gravelly open places, in the east and south of England.

13. **Subterranean Trefoil** (*T. subterráneum*).—Flowers 3—5 together, in axillary heads, erect, but bent down when in fruit, and sending out branched fibres from their centre, which penetrate into the ground. Plant annual. This is not an uncommon flower during May and June, on dry and gravelly pastures of England, having long slender white blossoms. It is a singular hairy species, a few inches long, its stems branching and lying over the ground. The flower-stalks gradually lengthen, till, at last, the blossom reaches the earth; the young fruit then bends down, and a number of thick stout fibres rise from the top of the fruit-stalk and bury the seed in the soil while yet attached to the plant. The pods are large and roundish.

14. **Suffocated Trefoil** (*T. suffocátum*).—Heads of flowers sessile and roundish; calyx membranaceous, with broadly awl-shaped teeth, bending backwards; petals shorter than the calyx. Plant annual. This rare little Trefoil grows on the coasts of Norfolk and Suffolk, and from Anglesea to Cornwall, in sandy and gravelly pastures. Its stem is about three or four inches high. The heads of flowers are dense and inconspicuous. They are produced in June and July. The whole plant is smooth.

15. **Upright Round-headed Trefoil** (*T. stríctum*).—Heads of flowers terminal and axillary, stalked and round; calyx at length shaped like a bell, with spreading awl-shaped teeth; leaflets long, narrow, and toothed; stems erect. Plant annual. The little globular heads of whitish flowers, and the

smooth leaves marked with beautiful lines, render this a pretty species. It is very rare, growing on rocky banks near the sea, in Cornwall. The Rev. C. A. Johns, who has given an account of this plant in his "Week at the Lizard," remarks, that it is well distinguished from the other species of Trefoil by its 2-seeded pods, which are bulged near the summit, and by its narrow-toothed leaflets, resembling in shape those of the common melilot. It grows at Old Lizard Head, and at Jersey, and is in flower during June and July.

* * * *Calyx inflated after flowering.*

16. **Strawberry-headed Trefoil** (*T. fragíferum*).—Heads globose, on long stalks; calyx becoming membranaceous after flowering, downy, and remarkably inflated; stem creeping. Plant perennial. Anyone who noticed this Trefoil would at once think of a strawberry. Its heads of flowers are small, of deep purplish-red, roundish, and becoming, when in fruit, larger, sometimes an inch in diameter, and more decidedly globular. It is not a very common plant on our pasture lands, but the author has found it most abundant on some salt marshes. On the marshes near Pegwell, in Kent, as well as on those about Sheerness, in the same county, it is a frequent flower in July and August.

17. **Reversed Trefoil** (*T. resupinátum*).—Heads of flowers at first hemispherical, gradually becoming round, stalked; corollas inverted from the ordinary position, the front becoming the back part; calyx membranaceous, hairy, and acute, inflated after flowering; leaflets inversely egg-shaped; stem prostrate. Plant annual. This species, which was probably introduced by ballast, has been found in meadows, near Bristol, near the quay at Ham, in Dorsetshire, and near Liverpool, blossoming in July.

* * * * *Standard withering, but not falling off; finally bending down and covering the pods; flower yellow.*

18. **Hop Trefoil** (*T. procúmbens*).—Flowers in dense, roundish, oblong heads; leaves stalked; leaflets inversely heart-shaped. Plant annual. This Trefoil is very abundant, bearing yellow hop-shaped heads from June to August, on most of our pasture lands and grassy banks, or field-borders. Several of our Trefoils require a great degree of attention to their characters in order to identify the species, but this may be known at a glance by its yellow oval heads. The only plant for which it could possibly be mistaken would be the hop medick, but that is well distinguished from this by its rugged legume. It is usually about four inches high, and is sometimes sown in fields for fodder, but it is not so nutritious as the common purple or white clover.

19. **Lesser Yellow Trefoil** (*T. mínus*).—Flowers in dense heads, 6 to 15 together; leaves scarcely stalked; leaflets inversely heart-shaped, the central one on a longer stalk; stems prostrate and hairy. Plant annual. This is a common little Trefoil, on dry grassy places, as meadows and roadsides, its small yellow flowers appearing in June and July. It is doubtful if it is essentially distinct from the next species. It differs from it chiefly in having its partial flower-stalks much shorter, and in its standard covering

the ripened pod; whereas in the next species, the standard is narrower, and does not cover the legume.

20. **Slender Yellow Trefoil** (*T. filiforme*).—Heads of flowers loose, from 2 to 5 together; leaf-stalks all of the same length, and scarcely longer than the stipules; leaflets inversely heart-shaped; stem smooth. Plant annual. This rare species, which is the *Trifolium micranthum* of some botanists, is in bloom during the summer months, its yellow flowers springing up on dry pastures, especially near the sea, in England and Ireland. In Scotland it appears to extend no further north than Roxburgh, except as an introduced species.

9. Bird's-foot Trefoil (*Lotus*).

1. **Greater Bird's-foot Trefoil** (*L. major*).—Flowers in umbels, from 8 to 10 together; calyx-teeth awl-shaped, spreading like a star when in bud; leaflets inversely egg-shaped; stems nearly erect, tubular. Plant perennial. This is a common plant in damp hedges near streams, sometimes entangling itself, almost like a vetch, among the bushes and other plants, its stem being from one to three feet in height, and very weak. The leaves are sometimes smooth, but usually they are covered more or less with soft silky hairs. Its deep yellow flowers appear in July and August. It is by many botanists known as *L. uliginosus*, on account of its preference for moist and boggy places.

2. **Common Bird's-foot Trefoil** (*L. corniculatus*).—Flowers in umbels, 8 or 10 together, bending somewhat downwards; flower-stalks very long; calyx-teeth straight in the bud; the 2 upper teeth bending inwards; stem prostrate; leaves inversely egg-shaped, nearly smooth. Plant perennial. Everyone knows the pretty little Bird's-foot Lotus, which is so abundant during May on our pastures, and which is commonly called Lady's Slipper, and in some counties, Shoes-and-stockings, Butter-jags, or Cross-toes. The flowers are bright yellow, some of them rich brown or orange; and the young buds are often of a deep crimson tint. The foliage, though generally smooth, is in one variety (termed *villosa*) thickly clothed with long spreading hairs, which invest also the stem and the calyx. A variety occurs also in which the plant has fleshy leaves; and in another, the leaflets are much longer and narrower than in the ordinary form, so that the plant, in these circumstances, has been described as a different species, under the name of *Lotus tenuis*.

The leaves of the Bird's-foot Trefoil become blue when drying for the herbarium: they would, probably, afford a die resembling indigo, which is the produce of a leguminous plant. The French call the flower *Le Lotier*; the Germans, *Der Schotenklee*; the Dutch, *Rolklaver*; and it is the *Loto* of the Italian and Spaniard. "The name of Lotus," says Professor Burnett, "is probably of Egyptian origin, and has been given to several different plants. The ancients seem to have distinguished three sorts: the Tree Lotus, the Marsh Lotus, and the Herb Lotus; the two former of which, the *Zizyphus lotus* and *Nymphæa lotus*, retain the original name as a specific, and the latter as a generic name." Both our Common Lotus and the larger species have been recommended by good writers on agriculture as suitable for sowing with white clover. Dr. Henderson wrote much in favour of these plants; and

Sinclair, in his work on "British Grasses," mentions this as a valuable addition to the pasturage of a moist meadow. The pods of one species, the *Lotus edulis*, are eaten by the poor people of Candia; and the *Lotus rectus*, which we see in our greenhouses, and receive from the south of Europe, is by some writers supposed to be the Cytisus of Virgil. The dark-flowered *Lotus jacobæus*, as well as its yellow variety, are favourite greenhouse flowers, and are in bloom all the year.

Our pretty flower enlivens not only the rich grass of the green meadow during all the summer months, but adorns also many a sunny slope whose short grass gives a fainter tinge of green to the sward. Charlotte Smith mentions it among the flowers of such a spot on Beachy Head, and her description is so truly graphic, that the mind involuntarily pictures one of the chalky downs surrounded by such scenery:—

"Let us turn
To where a more attractive study courts
The wanderer on the hills; while shepherd girls
Will from among the fescue bring him flowers
Of wondrous mockery, some resembling bees
In velvet vest, intent on their sweet toil;
While others mimic flies, that lightly sport
In the green shade, or float along the pool,
But here seem perch'd upon the slender stalk,
And gathering honey-dew. While in the breeze
That wafts the thistle's plumed seeds along,
Blue-bells wake tremulous. The mountain thyme
Purples the tussock of the heaving mole,
And the soft turf is gay with tormentil,
And Bird's-foot Trefoil, and the lesser tribe
Of hawkweeds, spangling it with fringed stars,
Near which a richer tract of cultured land
Slopes to the south; and burnish'd by the sun
Bend in the gale of August floods of corn."

3. **Slender Bird's-foot Trefoil** (*L. angustissimus*).—Heads 1 or 2 flowered; flower-stalks shorter than the leaves; leaflets broadly lanceolate; calyx-teeth awl-shaped, straight in the bud; stems prostrate; legumes slender, four times the length of calyx. Plant annual. The whole of this plant is covered with soft hairs, and its legumes are generally long, in one variety very long, but in another broad and short. It is a rare plant, occurring in Devonshire, Cornwall, and some other counties. Its flowers are much smaller than those of the preceding species, and its whole appearance very different from them.

4. **Bristly Bird's-foot Trefoil** (*L. hispidus*).—Similar to the last, but the flower-stalks are longer than the leaves and bear 3 or 4 flowers. The stipules are half heart-shaped, whilst in *L. angustissimus* they are oval-lance-shaped. The legume is about twice the length of the calyx. It is rare, like the last, and flowers in July and August, on dry banks by the sea from Hampshire to Cornwall and in the Channel Islands only.

10. LADY'S FINGERS (*Anthyllis*).

Lady's Fingers, or **Kidney-vetch** (*A. vulnerária*).—Herbaceous; leaves pinnate; the terminal leaflet largest; heads of flowers in pairs; bracts large, digitate, or palmate. Plant perennial. The swollen white calyxes, covered with woolly down, are the most conspicuous feature in the blossom

1. 17. COMMON BIRDS-FOOT TREFOIL.
Lotus corniculatus
2. NARROW LEAVED B.
L. major.
3. SLENDER B.
L. angustissimus
4. MOUNTAIN OXYTROPIS
O. uralensis.
5. YELLOWISH M. OXYTROPIS
O. campestris.

Pl. 63.

of this plant, and procured for it in our rural districts the name of Lamb's Toes; while another species, growing in the south of Europe, which has still thicker down on its cups, is on this account called Jupiter's Beard. The leaves are of a pale sea-green colour, smooth at the edges, very thick, and remaining green for some months after the flower is dead, these sprays forming a pretty ornament to the inland or seaside chalky cliff, on which they are often abundant. They are common on the sea-cliffs both of Dover and of the Cornish shores, becoming in the latter somewhat stunted, but being luxuriant on the former spot. The flowers are small, but in dense clusters; they are most generally yellow, but are sometimes white, crimson or cream-coloured. Linnæus remarked of it that in Œland, where the soil is of red calcareous clay, the flowers are red, but that on the white chalky soil of Gothland they are white. This plant, as well as several of the species of other countries, affords a good pasturage for cattle. Mr. Young, who recommended its culture, says, that it is very abundant on the best meadows of the Pyrenees, where it is of smaller growth, and less astringent in property. Some of the best pasture lands of the south of Europe abound with the Kidney-vetch, and many agriculturists have thought that it would repay the attention of British farmers, as it flourishes so well on dry barren soils. It was of old used as a vulnerary; and Gesner having recommended it as an application for stanching the effusion of blood, it shared, with several of our plants, the name of Wound-wort, and was also called Staunch. In the early part of the eighteenth century it was commonly sold in Ireland under that name. The French call it *L'Anthyllide;* the Germans, *Die Wollblume;* the Dutch, *Wund Kruid;* and it is the *Antilide* of the Italians and Spaniards. It flowers from June to August; in Cornwall as early as the middle of March. It is very common in the north of Europe. A good yellow dye may be procured from its flowers.

11. Oxytropis.

1. **Hairy Mountain Oxytropis** (*O. uralénsis*).—Leaves and flowers rising directly from the roots; flower-stalks longer than the leaves; all parts of the plant covered with silky hair. Plant perennial. This is a very lovely ornament of some pasture lands in Scotland. Its leaf spray is composed of from eight to twelve pairs of leaflets, which are thickly clothed with silky hairs, so as to give them a glossy, almost metallic appearance, especially when they are only half unfolded, and when the silky hair is most dense. The flowers are in close heads, of a bright purple colour, appearing in June and July.

2. **Yellowish Mountain Oxytropis** (*O. campéstris*). — Stemless leaflets having silky hairs scattered over them; legume imperfectly two celled. Plant perennial. This is a rare flower of the Clova Mountains. Its heads of blossoms are of pale yellow, tinged with purple.

12. Milk-Vetch (*Astrágalus*).

1. **Sweet Milk-vetch** (*A. glycýphyllos*). — Stem prostrate; leaflets oval; leaves longer than the flower-stalks; stipules large, egg-shaped, and pointed; pods somewhat triangular, smooth and curved. Plant perennial. This is not a very common plant in England, and it is still more unfrequen

in Scotland. It would, however, immediately attract the notice of anyone at all observant of wild flowers, by its large leaf, so much larger than any of our native vetches. The author can remember, that when she first met with this plant in a green lane, near Higham, in Kent, she thought that these leaves must be those of a young shoot of the garden *Robinia*, False Acacia, as it is commonly called, which had sprung up from seeds brought from some neighbouring garden. Both in form and colour they resemble such a shoot, but their large stipules, free from each other, and from the leaf-stalk, form a marked feature of this leaf, and in more fully-grown specimens of the Milk-vetch, the prostrate stems, sometimes two or three feet long, and the dull yellow flowers, render this plant easy of distinction from all others. The legumes are sometimes an inch and a half long, and are curved in the form of a sickle.

This plant is called Sweet Milk-vetch, from the sweetness of its leaves and roots, which are on the first taste pleasant, but leave a bitter and disagreeable flavour on the tongue. This causes them to be disliked by cattle, and they are left quite untouched when occurring among the pasture. Were it not for this, the plant would doubtless have been cultivated, yielding, as it does by its large leaves, so great an amount of herbage. Several species of Astragalus, in other lands, have the sweet flavour without the succeeding bitterness. Thus the roots of *Astragalus aboriginorum* are long and yellow, like liquorice roots, and in Arctic America, where it grows wild, it is collected as an article of food by the Crees and Sioux Indians. The roots of another species, *Astragalus ammodytes*, which is also sweet, are used in Siberia instead of liquorice.

We have but three native species of Astragalus, neither of which is sufficiently important to form a feature in our landscape. There are vast tracts, however, in other countries, of which the different species form the chief feature. Mount Etna, celebrated by the ancients for its odoriferous productions, and said by Plutarch to emit so strong a scent from its varied flowers, that the hunter was overcome by their fragrance, has thick half-globular mounds in great abundance, formed by the growth of a species of Milk-vetch. The *Astragalus siculus* is the predominant plant amid its varied vegetation, and these singular mounds are sometimes five feet in diameter and two and a half in height, this thick and dwarfed mode of growth resembling that of several plants found in the Alpine regions of the Cordilleras. On the open plains of the Asiatic steppes, however, they attain considerable height. Baron Humboldt remarked of some of these steppes, in the temperate zone, that they were full of flowering herbaceous plants, especially of a papilionaceous kind, in which hosts of species of Astragalus immediately attracted the attention.

Our Sweet Milk-vetch is the largest of the British species, but our gardens exhibit some very pretty shrubby kinds. The seeds of several of the foreign species are roasted and used as coffee, but this cannot at all rival, either in flavour or in refreshing properties, the produce of the Arabian berry. Gum Tragacanth is also yielded by some kinds of Astragalus; and its power to render water viscid is about twenty-four times as great as that of the Gum Arabic. Several of these plants are used medicinally.

1. SWEET MILK-VETCH
Astragalus glycyphyllus
2. PURPLE MOUNTAIN M.V.
A. hypoglottis.
3. ALPINE M.V.
A. alpinus.
4. COMMON BIRDS-FOOT
Ornithopus perpusillus.
5. SAND JOINT-VETCH
Arthrolobium ebracteatum.
6. HORSE SHOE VETCH
Hippocrepis comosa.
7. SAINT FOIN
Onobrychis sativa.

Pl. 64.

2. **Purple Mountain Milk-vetch** (*A. hypoglóttis*).—Stem prostrate; flower-stalks longer than the leaves; leaflets oval, hairy; stipules united; pods erect, stalked, hairy, and two-seeded. Plant perennial. This Milk-vetch is very different in appearance from the last, as its stems are slender, and not more than two or three inches long. The heads of the flowers are very large in proportion to the size of the plant. They occur in June and July, and are of dark bluish-purple, or sometimes pale lilac, or white. The plant, though somewhat local, is abundant on some dry gravelly and chalky pastures, chiefly in the south of England. It grows plentifully on Royston Heath, in Cambridgeshire. The French call the Milk-vetch *L'Astragale;* the Germans, *Tragant;* the Dutch, *Kootruid;* and it is the *Astragalo* of the Italian and Spaniard.

3. **Alpine Milk-vetch** (*A. alpínus*).—Stem ascending; leaflets oval; stipules egg-shaped, free; legumes stalked, drooping, two or three-seeded, and clothed with black hairs; whole plant downy. This, which like the other species is perennial, is exceedingly rare. Its recorded places of growth are the Glen of the Dole, Clova, and Little Craigindal, Braemar. It bears clusters of few spreading or drooping flowers in July, which are white and tipped with purple. This plant is by some writers called *Phaca astragalina.*

13. Vetch, Tare (*Vicia*).

* *Flower-stalks lengthened, sometimes longer than the leaves; calyx gibbous at the base.*

1. **Wood Vetch** (*V. sylvática*).—Flower-stalks many-flowered, longer than the leaves; leaflets in about eight pairs, elliptical, abrupt, with a sharp point; tendrils branched; stipules crescent-shaped, deeply toothed at the base. Plant perennial. Few of our wild flowers are more ornamental to our hedges in summer than the Vetches which tangle among the bushes, holding themselves by leaning on their stronger neighbours; and as Cowper says, repaying

> "The strength they borrow with the grace they lend."

Of all our wild Vetches this is the loveliest, its beautiful white flowers, streaked with bluish veins, being very numerous and large. It is not, however, a common plant, growing chiefly in mountainous woods, or in bushy places of mountainous districts in Scotland, the north and north-west of England, Ireland, and Wales; though it has been found in Kent, Oxfordshire, and other counties away from mountains. Sir Walter Scott thus describes it—

> "Where profuse the Wood-vetch clings,
> Round ash and elm in slender rings,
> Its pale and azure pencill'd flower
> Should canopy Titania's bower."

It flowers in July and August, and its long stem climbs sometimes to the height of six feet, its branching tendrils entwining themselves on the woodland boughs.

Mr. Lees remarks, while objecting to the practice of scattering the seeds of garden-flowers in wild places,—"Last week I passed through a wood covering one of the transition limestone hills, near Ledbury, which was most profusely ornamented by the beautiful *Vicia sylvatica*, festooning the trees on all sides. I was delighted in the extreme at this wild production of

nature, so strikingly lovely, though," adds this botanist, "had it been in the power of any person to have informed me that some ornamenter of wilds had been profusely sowing the plant in the wood, my pleasure would have been much abated; nor could I in that case have concluded that a calcareous soil was the natural home of the plants." We share with Mr. Lees in his dislike of the practice of scattering the seeds of exotic plants among the wild woods and rocks. In the progress of man's mechanical skill, we shall soon have little left to us of the true country; we would fain preserve its wild flowers in all their native beauty, unmingled. The garden, the plantation, and the pleasure-ground, are, as Mr. Lees remarks, the proper places for man's sportive and improving hand. Many of our wild plants have been, and deserve to be, admitted within its inclosure. The Rev. W. T. Bree asks of this Wood-vetch, "Why is not this beautiful climber, certainly one of the most charming and elegant of our native plants, more frequently cultivated in the garden? Is it on account of any peculiarity of the soil which it requires? or the difficulty of making it succeed in a state of cultivation? It generally prefers a chalky or calcareous soil; thus I have observed it in beautiful luxuriance in the neighbourhood of Clifton and Bristol, also in the vicinity of Oxford, and lately near Dover. But it also occasionally occurs in a light sandy soil, as in Bentley Park, near Atherstone, in Warwickshire. I have more than once sown the seeds in the garden, and seldom succeeded in making them come up, or at least raising them to perfection. What is the cause of the failure?"

This is a valuable herbage plant, furnishing by its bulk a large amount of food, which is very nutritive. Many agriculturists have recommended that it should be sown in fields; but Mr. Curtis was of opinion, that if cultivated alone, the plants would become entangled and perish for want of support.

2. **Tufted Vetch** (*V. cracca*).—Flower-stalks elongated, many-flowered; leaves of about ten pairs; leaflets lanceolate, with spiny point, silky; stipules entire, half arrow-shaped; calyx-teeth shorter than their tube; pods linear, oblong, smooth. Plant perennial. During the months of July and August, the handsome crowded spikes of the Tufted Vetch climb to the topmost bough of the hedge, or droop down in luxuriance among the branches of the wood. They are of a rich purplish-blue, the flowers all turning one way, and the spikes often two or three inches long. The lover of flowers is glad to see this lovely Vetch, clinging to the hedges by the meadow; and the farmer welcomes it there too, knowing that it affords a large amount of fodder to the animals grazing on its pasture. Dr. Plot, in his "History of Staffordshire," says of this nutritious plant, and the *Vicia sylvatica*, that they "advance starven or weak cattle above anything yet knowne." Its culture has been often recommended. It might have been this flower to which Charlotte Smith alludes in the lines which so well describe the summer hedge:—

> "An early worshipper at Nature's shrine,
> I loved her rudest scenes—warrens and heaths,
> And yellow commons, and birch-shaded hollows,
> And hedgerows bordering unfrequented lanes;
> Bower'd with wild roses, and the clasping woodbine,
> Where purple tassels of the tangling Vetch
> With bittersweet, and bryony inweave."

1. SPRING VETCH. Vicia lathyroides
2. COMMON V. V. sativa a & b.
3. BUSH V. V. sepium.
4. SMOOTH PODDED V. V. levigata
5. ROUGH PODDED YELLOW V. V. lutea.
6. HAIRY FLOWERED YELLOW V. V. hybrida
7. ROUGH PODDED PURPLE V. V. bythynica
8. TUFTED V. V. cracca.
9. WOOD BITTER V. V. orobus
10. WOOD V. V. sylvatica.
11. SLENDER TARE V. tetrasperma
12. HAIRY TARE V. hirsuta.

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The seeds of the Tufted Vetch are roundish and black; doubtless they, with those of the other vetches, contribute to furnish food for our wild birds.

3. **Wood Bitter Vetch** (*V. órobus*).—Leaves pinnate, hairy; with from seven to ten pairs of egg-shaped, somewhat oblong acute leaflets; stipules half arrow-shaped, slightly toothed at the base; flower-stalks many-flowered; stem branched, prostrate, hairy; tendrils reduced to a point. Plant perennial. This Wood-vetch or Wood-pea, as it is often called, flowers in May and June, having one-sided clusters of cream-coloured blossoms with purple streaks. It is not common in the South of England, but in the woods and mountainous and rocky places in the West, it is not an unfrequent plant among bushes.

4. **Rough-podded Purple Vetch** (*V. bithynica*). — Flower-stalks shorter than the leaves, 1 or 2-flowered; leaflets either linear or lanceolate, acute, upper leaf-stalks having two pairs; stipules half arrow-shaped and toothed; calyx-teeth lanceolate, somewhat awl-shaped. Plant perennial. This rare species is found where the soil is of gravel, occurring chiefly near the sea. The flower is of purplish colour, with paler, almost white wings, and the round seeds are speckled with black and grey. The blossoms are most often solitary, and appear in July and August.

* * *Peduncles short, axillary, few-flowered; calyx equal at the base.*

5. **Spring Vetch** (*V. lathyroides*). — Flowers solitary, sessile; pods smooth; leaflets in two or three pairs, inversely egg-shaped or oblong, tipped with a spine; calyx-teeth awl-shaped; stipules entire, not marked with a dark spot; pods linear, smooth; seeds nearly cubical, roughish. Plant annual. This species is very nearly allied to the next, looking like a dwarfed specimen of it. Its stem is prostrate, and usually about six inches long. The flowers are of bright purple, and expand in April and May.

* * * *Flowers axillary, scarcely stalked; calyx swelling at the base on one side.*

6. **Common Vetch** (*V. sativa*).—Flowers solitary or in pairs, nearly sessile; leaflets in from four to seven pairs, oblong or inversely heart-shaped, the upper ones narrowest, all tipped with a spine; calyx-teeth equal; pods slender, somewhat silky; stipules half arrow-shaped, toothed at the base, marked with a sunken dark spot; seeds round and smooth. Plant annual. This Vetch is often found growing apparently wild in fields and hedges, but it is no native, and has most probably escaped from cultivation. The plant is very extensively sown for cattle, and is the summer and winter tare of the agriculturist. These two Tares were long regarded as different species, but Professor Martyn, on cultivating them both, found that they were not even distinct varieties, only requiring that the one should be sown in the spring, the other in October. This is the only species of the genus, except the bean, which is cultivated to any extent in this country.

The Tare crop is of so much importance in our own land, that Mr. Young observed, that not one-tenth of the animals reared for the use of man could be supported without it. "This Common Vetch," he says, "maintains more animals than any other plant whatsoever, no artificial food being to be compared with it." Another advantage of the Tare to the cultivator is mentioned

by Professor Thaers, which is, that when cut green it does not exhaust the soil; and that when made into hay it is more palatable and nutritive to cattle than any other food. Vetches are generally cut down before ripening their seeds, but these are sometimes allowed to ripen, either for sowing or for feeding pigeons. This plant is usually about two feet high, and has purple, blue, or reddish flowers in June. A variety termed *angustifolia* has sometimes been described as a distinct species. Its upper leaflets are narrow, its flowers solitary or in pairs, generally smaller and of a brighter red than in the ordinary form, and its pods spreading; it is found in dry places. Another variety has also been termed *Vicia bobartii*; in this the flowers are solitary, the stem prostrate, and the pods spreading.

7. **Rough-podded Yellow Vetch** (*V. lútea*).—Flowers solitary, sessile; standard smooth; leaflets lanceolate in four or five to eight pairs; stipules marked with a deep red spot; calyx-teeth unequal, upper ones very short and curved upwards; pods hairy. Plant perennial. This is a rare species, growing in rocky or pebbly lands, especially near the sea, in England and Scotland. It is about two feet in height, and its flowers, which are produced in June and July, are large, and of pale yellow.

* * * * *Flower-stalks long; calyx equal at the base.*

8. **Hairy-flowered Yellow Vetch** (*V. hýbrida*).—Flowers solitary, axillary; calyx-teeth unequal, spreading; standard hairy; pods oblong and hairy; stipules egg-shaped and without spot; leaflets abrupt; stem ascending. Plant perennial. This yellow-flowered species is very similar to the last, and differs from it chiefly in the standard of its flower, which is covered with an abundance of glossy yellowish hair. It is in blossom in July and August; and was formerly found on Glastonbury Tor Hill, and at Swan Pool, Lincoln, but is now extinct in this country.

9. **Bush Vetch** (*V. sépium*).—Flowers from four to six in a small sessile cluster; leaflets egg-shaped, obtuse, gradually decreasing in size towards the end of the leaf-stalk; stipules half arrow-shaped, undivided or lobed; pods smooth; seeds round, marked with black and grey. Plant perennial. This species is very common in woods or under hedges, but it is not one of the prettiest of our vetches. Its clusters of pale pink or blue flowers are of a somewhat dull tint. They are to be found from April to June, for this is the earliest blooming of all the species; and in mild springs it will often put forth its blossoms even in March, while its young shoots are, as early as February, arrayed with tender green leaves, the first spring food of cattle. This plant also vegetates later in autumn than any other Vetch, and remains green the greater part of the winter. Its culture, as food for animals, has been warmly recommended. A patch of the Bush Vetch, sown in a garden, has been cut five times in the course of the second year, and produced a large amount of green herbage. Mr. Swayne observes that it is palatable to all kinds of cattle, but that it is difficult of cultivation on a large scale, the seeds being greedily devoured by the larvæ of some insect.

Several of the Vetches are grown to great extent in other countries of Europe. In Germany, the Broad-leaved Vetch, *V. narbonensis*, and the Saw-leaved Vetch, *V. serratifolia*, are much cultivated; and our garden and field

beans are species of Vetch. The sweet bean-field furnishes us with a pleasanter and more powerful odour than any other portion of our rural landscape. The bean, *Vicia faba*, said to have been introduced from Egypt, affords a large quantity of nutritious matter. The Windsor, Sandwich, and other garden beans are but varieties of the field plant. The reasons why Pythagoras forbade his disciples to eat the bean have led to many ingenious speculations among learned men. "Some persons," says Professor Burnett, "affirm that he believed the bean to be the retreat of the soul after death, and there were many superstitions connected with the seed, which was by some nations consecrated to the gods. Others suppose that the prohibition was founded merely on sanitary principles, and that Pythagoras, like Hippocrates, considered that beans were unwholesome, and weakened the eyesight. Even in our day it has been observed that mental alienations are more frequent during the blossom of the bean than at other seasons; a circumstance, however, explicable from the excessive summer heats that usually occur, and not attributable to the bean, although its black flowers were supposed, by the signature physicians, to be a prophetic mourning for the maladies to ensue. Other commentators, however, and with more seeming probability, affirm that when Pythagoras said 'abstain from beans,' he merely meant to restrict his disciples from intermeddling in political affairs, for it is well known that votes were formerly given by beans, and vestiges of this practice, at least in words, remain with us at the present day."

10. **Smooth-podded Vetch** (*V. lævigáta*).—Flowers solitary, axillary, nearly sessile; calyx-teeth nearly equal, awl-shaped; pods compressed, oblong, and smooth; stems ascending; leaflets in about four pairs, smooth; stipules cloven, without spot. Plant perennial. This species is now lost from the one spot in the world on which it formerly grew; but as, in some rare instances, plants which had been considered as extinct from our Flora, have again sprung up on our soil, it is not impossible that some future botanist may find this. There are writers who consider it, however, but a variety of the Rough-podded Yellow Vetch (*V. lutea*). The stem is from three or four inches to a foot long, the flowers pale purple, the seeds brown and oblong. The pebbly shore of Weymouth, in Dorsetshire, is the spot on which it was found, its blossoms expanding in July and August.

11. **Hairy Tare** (*V. hirsúta*).—Flowers about six together; pods hairy, 2-seeded; leaflets linear, oblong, in six or eight pairs; stipules half arrow-shaped. Plant annual. This straggling slender plant, the Tine Tare, as it is called in some counties, is very common in fields and hedges in England, though rare in Scotland. Its much-branched stem and leaves make tangled masses among the corn, and in June and July we may find its tiny bluish-coloured flowers. This plant and the next, form the British genus *Ervum* of some botanists, the name being said to have been derived from *Erw*, which signifies in Celtic, tilled land; and it is on such places that these little plants are often very plentiful and troublesome. This Tine Tare will, in wet seasons, sometimes destroy whole crops by entwining itself amongst them, and hence the peasant often calls it *Strangle Tare*. It is not, however, a useless plant in the hedge, for it is nutritive to cattle, and much relished by them, and the birds feast on its little reddish seeds, which are dotted with

black. These seeds were formerly said to produce debility in the limbs if they happened to be mingled with the flour made into bread, but this statement has been quite disproved, though they impart to the flour a strong and disagreeable flavour. Dr. Withering remarked, that both the Tine Tare and the four-seeded species increase with superabundant fertility; for it appears from experiments, that a single seed will, by the produce of one plant only, multiply a thousand-fold in a short time.

12. **Slender Tare** (*V. tetraspérma*).—Flowers from one to seven together; leaflets in from three to six pairs; pods slender, oblong, smooth, containing from four to eight seeds; stipules half arrow-shaped, entire. Plant annual. This Tare has very small pale purple flowers in June and July, and is the most slender of all our vetches. It is not unfrequent in cornfields and hedges in England, but is more rare in Scotland. Mr. Babington and other botanists describe also a species under the name of *Vicia gracilis*, in which the flowers are twice as large as in *V. tetraspérma*; but Sir Wm. Hooker and Dr. Arnott consider this plant but one of the several varieties, differing slightly from the ordinary form of the species.

14. Vetchling, Everlasting Pea (*Láthyrus*).

1. **Meadow Vetchling** (*L. praténsis*).—Flower-stalks many flowered; leaves of one pair of lanceolate, three-nerved, slightly silky leaflets; stipules arrow-shaped, as large as the leaflets; calyx-teeth awl-shaped; pods veined; seeds round and smooth. Plant perennial. The bright yellow flower of this handsome Vetchling may be seen, during July and August, in most bushy grassy places, the stems acquiring greater length, and the flowers an additional luxuriance, when the plant grows on the moist meadow, or among the bushes through which the brook is murmuring its music. The stems are angular, but not winged, and are often two or three feet long, climbing by means of their tendrils. Cattle are said to be very fond of this plant.

2. **Narrow-leaved Everlasting Pea** (*L. sylvéstris*).—Leaf of two sword-shaped leaflets; flowers four or five together; stipules half arrow-shaped; calyx-teeth triangular and awl-shaped, two upper ones short; stems winged; pods netted with veins; seeds smooth. Plant perennial. This is not a very frequent flower in our woods and thickets. It is very much like the Everlasting Pea of the gardens, but a much smaller plant. The blossoms are large, of a somewhat dull pinkish-purple colour, more or less tinged with green, and marked with purple veins. They are produced during June, July, and August. This Pea is found in the middle and south of England, but it is doubtful if always wild. Salisbury Craigs is a well-known habitat of the plant, and the author has found it in several places in Kent, as at Higham near Rochester, and about Lymne Castle near Hythe. It is exceedingly abundant along some of the Cornish cliffs, climbing up the stems of the Great Reed. It occurs also in some places in Scotland and in North Wales. The stem, which is almost flat, climbs to the height of six or seven feet by means of its tendrils.

3. **Broad-leaved Everlasting Pea** (*L. latifólius*).—Flowers growing several together; leaves of one pair of narrowly egg-shaped pointed leaflets; stipules broad, half arrow-shaped; pods veined; seeds rough; stem winged.

Plant perennial. This handsome flower is found in some woods in Cambridgeshire, Cumberland, Worcestershire, and other counties, but it is always the outcast of a garden. It is a well-known and showy climber, often in its cultivated state adorning the cottage porch or summer arbour, making it gay with its profusion of bright green foliage and its purple and pink flowers. The leaves are so abundant, and the seeds so numerous, that some agriculturists have thought that the plant would be worth cultivation for fodder. The Sweet-peas, Tangier Peas, and some other lovely flowers of the garden-bed, are species of Lathyrus. In Switzerland large fields are sown with another species, the Chickling Vetch (*Lathyrus sativus*), which is cultivated as food for horses; and on several parts of the Continent a white and well-flavoured bread is made from the seeds. In the seventeenth century, however, when this bread came into general use, very sad effects followed upon eating it as daily food. A great rigidity of the limbs ensued, causing a loss of muscular power, beyond the reach of cure. No pain served as a premonitory symptom, the sufferer experienced little more than a slight diminution of strength, when he suddenly found his limbs rigid, and movement impossible. Several of the lower animals were found, when fed on this diet, to lose all use of the limbs, and even pigeons which ate the seeds shortly became unable to walk, though geese could eat them with impunity. George, Duke of Wirtemberg, published, in 1671, an edict prohibiting the use of the bread in his dominions, but the peasantry still continued to eat it, till his successor, Leopold, by two edicts in 1705 and 1714, abolished its use. A variety of this *Lathyrus sativus*, called the Poisonous Pea of Barbary, is highly deleterious, and the Government of Florence forbade the use of the seeds in bread, in 1786; but Fabroni says, they are still used by the poor, boiled and mixed with wheaten flour, and that, thus prepared, they do not seem to leave any bad effects. The roots of *Lathyrus tuberosus*, a plant growing sometimes in Essex cornfields, are tuberous, and are called Earth-nuts. This species is cultivated in Holland, and in some districts on the borders of the Rhine, for these tubers.

4. **Seaside Everlasting Pea** (*L. maritimus*).—Flower-stalks many-flowered, shorter than the leaves; leaves of from 3 to 8 pairs of oval leaflets; stipules as large as the leaflets, halberd-shaped, with their angles acute; stem angular, but not winged. Plant perennial. On some of our pebbly beaches this pretty Pea may be found, during July and August, straggling over the stones with its short stems adorned with their numerous flowers. These are large and handsome, and are of a purplish or crimson hue, varied with blue. This Pea is very rare. It occurs more frequently on the eastern coast than in any other part of England, and the pebbly beaches of Lincolnshire and Suffolk are occasionally made gay with it.

There is little reason to doubt that this is a truly wild flower; but the legend is still told in Suffolk, that it sprang up on the coast there for the first time in a season when food was greatly needed. The wonderful appearance of this Pea is mentioned both by Stowe and Camden, who believed it to have grown from seeds borne out of some foundered bark by the rushing waves. Doubtless, many of the plants on our shores have such an origin, and would as well deserve as does the Guernsey Lily to be called the Flower of the

Wreck. Fuller says of this Pea: "In a general dearth all over England, plenty of Peas did grow on the sea-shore near Dunmow in Suffolk, never set or sown by human industry, which, being gathered in a full ripeness, much abated the high price in the markets, and preserved many hungry families from perishing." It is probable that they were usually plentiful on that coast in the summer season, but that, not having been needed, they had been little noticed. Meyen says that these Peas are eaten in Iceland, and considered to be well-flavoured. Climate often affects the properties and flavour of plants, and it may be so in this case, for the seeds of our Sea Pea are bitter and unpalatable, and could only be eaten by those who were suffering with hunger, though, perhaps, if mixed with wheaten flour they might be tolerable.

This species was called by Linnæus *Pisum marítimum*, but Bigelow placed it in this genus. The Pea which we see waving its purple or white flowers by thousands in the summer fields, is the common Pea of the south of Europe, *Pisum sativum*—the *Pisello* of the Italians; and the different edible garden Peas are, by some writers, thought to be all varieties of this species. The noble Roman family Pisones received their name from the Pea plant, as did the high families of the *Fabii*, *Lentuli*, and some others, from other plants of the leguminous family. Excellence in war and agricultural skill being the chief virtues of the Roman citizen, and a good agriculturist being among them synonymous with a good man, it is no marvel that they took names identifying them with the introduction of useful plants, or some improvements connected with their culture. The seeds of the Cape Horn Pea, some of which were brought to England by Lord Anson's cook, afforded great relief to the sailors during the voyages of that great navigator, though far inferior to those in ordinary cultivation.

5. **Blue Marsh Vetchling** (*L. palústris*).—Flowers from 3 to 6 together; leaf of from 2 to 4 pairs of very narrow acute leaflets; stipules lanceolate and half arrow-shaped; stem winged. Plant perennial. This rare species occurs in moist boggy meadows and thickets in several parts of England and Wales, and at Galloway, in Scotland, and may be seen in such spots as Keats has described:—

"Its taper fingers, catching at all things
To bind them all about with tiny rings,
Linger awhile upon some bending planks
That lean against a streamlet's rushy banks,
And watch intently Nature's gentle doings:
They will be found softer than ringdove's cooings.
How silent comes the water round that bend!
Not the minutest whispers does it send
To the o'erhanging sallows: blades of grass
Slowly across the chequer'd shadows pass:
Why, you might read two sonnets ere they reach
To where the hurrying freshnesses aye preach
A natural sermon o'er their pebbly beds.
* * * * *
The ripples seem right glad to reach those cresses,
And cool themselves among the emerald tresses;
The while they cool themselves, they freshness give,
And moisture, that the bowering green may live:
Thus keeping up an interchange of favours,
Like good men in the truth of their behaviours."

1. YELLOW VETCHLING. Lathyrus aphaca.
2. CRIMSON V. L. missolia.
3. ROUGH PODDED V. L. hirsutus.
4. MEADOW V. L. pratensis.
5. NARROW LEAVED EVERLASTING PEA. L. sylvestris.
6. BROAD-L E P. L. latifolius.
7. BLUE MARSH V. L. palustris.
8. SEA SIDE E P. L. maritimus.
9. TUBEROUS BITTER V. Orobus tuberosus.
10. BLACK BITTER VETCH. O. niger.

Pl. 66.

The stem of this plant is about two or three feet high, the leaflets about two inches in length, and the flowers, which are produced from June to August, are bluish-purple.

6. **Rough-podded Vetchling** (*L. hirsútus*).—Leaf of one pair of long and narrow leaflets; flower-stalks 2-flowered; pods hairy; seeds round, and rough with tubercles; stem and leaf-stalk winged. Plant annual. This is a very rare Vetchling, having pale blue flowers with a crimson standard. It blossoms in July and August, and has been found in cultivated fields in Essex, Kent, Surrey, and Yorkshire.

7. **Yellow Vetchling** (*L. aphàca*).—Flower-stalks single-flowered; leaf-stalks leafless, bearing tendrils; stipules arrow-shaped, very large, and looking like leaves. Plant annual. This singular plant is described as leafless, because, though in the young seedlings small tender leaves are occasionally developed, and consist of a single pair of leaflets, yet, in the full-grown state of the plant, the leaf-stalk spreads into a tendril, and the plant is then justly termed leafless, as the expanded plane of the leaf is not present. The pair of stipules at the base of each tendril are, however, as ornamental as leaves would be; and this is a pretty little plant, its yellow flowers appearing from June to August on its slender, weak, climbing stem. It is very rare, but grows in the borders of sandy or gravelly fields in some parts of England, especially Warwickshire, Norfolk, and Gloucestershire, but extending southwards as far as Kent and Devonshire. The author has received very luxuriant specimens from the Forest of Dean. The seeds of this species are very unwholesome, and if eaten are said to cause intense headache.

8. **Crimson Vetchling** (*L. nissólia*).—Leaflets wanting, a simple, long, narrow, sessile, leaf-like leaf-stalk supplying their place; stipules very small, and awl-shaped; pods cylindrical; seeds round and rough; stem generally erect. Plant annual. This very pretty species, which is often called Grass Vetch, is not common. It grows in grassy and bushy places about fields and parks; its stem is about a foot high, and it may easily be distinguished from any other of our wild Vetches by its grass-like leaves. Though not climbing in graceful convolutions, yet it is peculiarly elegant in form, and the small flowers are light crimson. The author has found it in meadow-lands about Tunbridge Wells. It blossoms in June and July.

15. Bitter Vetch (*Órobus*).

1. **Tuberous Bitter Vetch** (*O. tuberósus*).—Leaflets in from 2 to 4 pairs, smooth, without tendrils, and glaucous on the under surface; stipules half arrow-shaped, toothed at the base; stem simple, erect, winged; pods cylindrical, seeds round. Plant perennial. This pretty Vetch is not uncommon in woods and thickets, especially in mountainous districts. It has clusters of the purple and pink veined flowers on long stalks, in the axils of its leaves, and has much of the general aspect of the Vetches, but is without tendrils. It flowers in May and June, and after the blossoms have died, the long, black, drooping pods are very conspicuous. In country places it is often called Peaseling, or Wood Pea. The French term it *L'Orobe*, the Germans *Die Bergerbse;* it is the *Erben* of the Dutch, and the *Orobo* of the Italian and Spaniard. There is a variety of this plant with linear leaves,

called *tenuifolius*. Some botanists place both this and the next species in the genus *Lathyrus*.

The tuberous roots of this plant constitute the *Cormeille* of the Highlanders, and are very highly esteemed by them. They are dried in the sun, and afterwards chewed, in order to add a relish to their whisky; and, according to the Highlanders, they have the power of allaying both hunger and thirst. Like the roots of several of our leguminous plants, they have a sweet flavour, resembling liquorice, and they are, when boiled, very nutritious and palatable. They have often been substituted for bread in times of famine, and many think that this plant is the *Chara* mentioned by Cæsar as affording temporary food to the famished soldiers at the siege of Dyrrhachium, and also believe it to be the ancient Caledonian food described by Dio. In Holland, the roots are commonly boiled and eaten, or they are brought to table after being roasted, like chestnuts, and the flavour is then so similar to that fruit, that one could scarcely detect the difference. Dickson recommended their culture for the kitchen-garden, remarking, that by the end of the second year the roots would be fit for gathering. Country children, where the plant is common, make many a meal of them.

2. **Black Bitter Vetch** (*O. níger*).—Stalks many-flowered; leaves of from 3 to 6 pairs of lanceolate or oblong leaflets, without tendrils; stipules narrow, somewhat awl-shaped, lower ones half arrow-shaped; pods containing oval seeds; stem angular, branched, not winged. Plant perennial. This species is rare, and found only on shady rocks in Scotland. Its blossoms are very similar to those of the last species, and appear in June and July. The plant turns black in drying.

16. Bird's-foot (*Ornithopus*).

Common Bird's-foot (*O. perpusillus*). — Flower-stalks longer than the leaves; calyx-teeth triangular, acute; leaves pinnate, with from 6 to 9 pairs of oval leaflets, and a terminal one; pods curved, jointed, and wrinkled; flowers nearly sessile. Plant annual. This is a very pretty little plant, common on dry, sandy, or gravelly soils; often the companion of the harebell on open heath or sunny bank. It is the smallest of our leguminous plants; sometimes so small that its spreading prostrate sprays of downy leaves, and its tiny flowers, might all be covered by a crown-piece, though often the stems are five or six inches in height. The plant is in flower from June to August, the little cream-coloured blossoms being veined with crimson, and having a leaf under each cluster. The pods are very singular, bending round, as they ripen, into a curve, and at once suggesting the idea of a bird's foot. This genus shares in other countries the name given from this resemblance, and is the *Pied d'oiseau* of the French, the *Piede d' uccello* of the Italians, the *Vogelfuss* of the Germans, the *Vogelpoot* of the Dutch, and the *Serradilla* of the Spanish and Portuguese, though they also call it *Pé de passaro*. The Spanish Bird's-foot, under the name of *Serradilla*, is cultivated in fields, and is the *Ornithopus sativus* of the botanist. It was introduced into our own country, for field culture, from Portugal, about the year 1818, and is a very valuable plant for this purpose. It produces a large amount of herbage fitted for cattle; and on the barren soils of the sandy downs of

Thetford, in Norfolk, where other plants would not thrive, this has been cultivated with advantage. It is not, however, like our wild species, a small plant, but commonly attains the height of two feet. Our Bird's-foot was said by herbalists to be of "a binding, drying quality, and very good for a wound-drink, as also for an outward application in cure of wounds."

17. Joint Vetch (*Arthrolóbium*).

Sand Joint Vetch (*A. ebracteátum*).—Flower-stalks about as long as the leaves, from 2 to 4-flowered; stipules very small; leaves pinnate, with many pairs of oblong leaflets, the lowest pair remote from the stem; pod curved upwards, jointed, and rough. This little Vetch is very similar to the bird's-foot, but has no floral bract. It is exceedingly rare, being found in this kingdom only in the Scilly and Channel Islands. It has small yellow or yellowish-white flowers, with red lines, appearing from June to August; and its stem is prostrate, and scarcely thicker than a thread.

18. Horseshoe Vetch (*Hippocrépis*).

Tufted Horseshoe Vetch (*H. comósa*).—Flowers from 5 to 8, in an umbel, their stalk longer than the leaves; pods curved, rough, having smooth joints and semicircular notches. This is a common annual plant, on chalky and limestone soils, and well known in such districts of England, though rare in Scotland. It might be mistaken for the bird's-foot lotus, but for its singular pods, which look so like a number of horseshoes united together at their extremities, that we wonder that the old herbalists did not consider them as indicative of some uses in farriery. We have one or two pretty species of this genus in the garden, brought from the south of Europe. The blossoms of the tufted species are yellow, and are produced from May to August.

19. Saintfoin (*Onóbrychis*).

Common Saintfoin (*O. satíva*).—Leaves pinnate, nearly smooth; leaflets oblong, entire, in about twelve pairs; legumes wrinkled and toothed; wings of the corolla as short as the calyx; stem ascending. Plant perennial. The very handsome crimson flowers of the Saintfoin are, during June and July, familiar to those who live in those counties in which chalk or limestone prevails. It is not only to be commonly found wild in such districts, but it is often largely cultivated on chalk soils, where it is of great duration and worth; its especial value being that it may be grown on lands unfit for being constantly under tillage, and which would yield little produce if laid down in pasture. On many a sunny slope its richly-tinted spikes form a wide mass of crimson, and we know of no cultivated field which is more truly ornamental to the landscape than the field of Saintfoin. The long descending roots of this plant can penetrate the fissures of rocky or chalky substrata, which the roots of other plants of field culture could not reach. Its herbage is equally fitted for pasturage, or for making into hay. Arthur Young says, that upon soils pr[illegible]r for it, no farmer can sow too much of it; and in the code of agricultur[illegible] is pronounced to be one of the most valuable herbage plants which we [illegible] to the bounty of Providence. Fuller, in his "Worthies

of England," remarks of it—"Sainte-foin, or Holy Hay: Superstition may seem in the name, but I assure you there is nothing but good husbandry in the sowing thereof. Some call it the small clover-grass, and it profiteth best in the worst ground. It was first fetcht out of France from about Paris, and since is sown in divers places in England, but especially in Cobham Park, in the county of Kent, where it thriveth extraordinary well on dry chalky banks, where nothing will grow. It will last seven years, by which time the native grasse of England will prevail over this forraigner, if it be not sown again." This old writer was pretty nearly correct in this latter statement. The Saintfoin comes to perfection in about three years, and begins to decline about the seventh or eighth year on gravelly soils, though it will last two or three years longer on chalk. In some rare cases, however, there are fields of Saintfoin, which, having been long neglected, were mostly, as Fuller says, "prevailed over by the native grass," in which single plants have yet remained fifty years after sowing. It has been cultivated upwards of a century on the Cotswold Hills, and on these soils roots of the Saintfoin have been traced down into stone quarries from ten to twenty feet in length. Von Thaers has found them in Germany attaining the length of sixteen feet.

The Saintfoin is called *Le Sanfoin* and *L'Esparçet* by the French, *Esparette* by the Germans, and *Hannekammetjes* by the Dutch. It was formerly included in the genus *Hedysarum*, the plants of which it much resembles. The French honeysuckle of our gardens, and the False Saintfoin of southern Europe, are well-known allies of our wild flower. The former, *Hedysarum coronarium*, which looks like a very large Saintfoin, grows wild in great luxuriance in Calabria, where it attains the height of nearly four feet, and affords abundance of food to horses. Osbeck says, that he saw large bundles of it brought to Cadiz as fodder for cattle. Another species is extremely useful for fixing the loose sands of some countries of the south of Europe; and various exotic kinds are prized in those lands as affording valuable tonic medicines. The roots of one species, the Senna-like Saintfoin (*H. sennoides*), are stimulating, and are sold in the bazaars of India, and administered by native practitioners in cases of fever. Our herbalists call our Saintfoin Cock's Head, Red Fitching, and Medick Fetch. One of them says of it, "It hath power to rarify and digest, and therefore the green leaves, bruised and laid as a plaister, disperse swellings;" though we might add, as Gerarde did to the account given of the virtues of some other plant, "Whereof they had those notions, I know not; it may be of some doctor who never went to school."

The celebrated *Churra Borrum* of the Hindoos, the Moving Saintfoin (*Hedysarum gyrans*), is well known as the most singular of all sensitive plants. Its movements are not occasioned by any touch or vibration of the air; no sooner have the young seedlings acquired their triple leaves than this mysterious movement commences, never to cease wholly till life is extinct. No apparent influence directs the motion; one leaflet moves while all others are quiescent; or a few leaflets only are in agitation; or all are in movement at once. Grasp the leaflets in your hand, and they are compelled to rest; but release them, and they are restless as the sea-wave or fluttering wing of the bird. Heat quickens the movements, and cold retards them; but they

offer the most singular instance of spontaneous action exhibited by any vegetable, save by some microscopic plants.

Order XXVI. ROSACEÆ—ROSE TRIBE.

Calyx with 4 or 5 divisions, or twice as many, in 2 rows; petals 5, regular, inserted on the calyx; stamens generally more than 12, but indefinite in number, inserted on the calyx, curved inwards before the expansion of the petals; carpels many, or solitary, either distinct or combined with each other and with the calyx; styles distinct, often lateral; fruit either a drupe, as the Cherry, an assemblage of erect capsules opening at the side, a number of nut-like seeds inserted into a fleshy receptacle, as the Strawberry, or the seeds are enclosed in the fleshy tube of the calyx, as in the Rose, or lie in the midst of a fleshy substance, and form a pome, as in the Apple.

This very large and important Order contains herbs, shrubs, and trees, natives chiefly of the temperate or cold climates of the Northern Hemisphere. The fruits are, in all our British species, wholesome and mostly agreeable; but many of the plants which furnish them are poisonous, from the hydrocyanic or prussic acid contained in their leaves, bark, flowers, and seeds. To this Order belong our Apples, Cherries, Raspberries, Strawberries, and a variety of other valuable fruits; and Almonds, Peaches, Nectarines, and the Apricot, which the Persians call the Seed of the Sun, are among the rosaceous fruits introduced into our gardens. The valuable evergreens, the Cherry Laurels and Portugal Laurels, are also familiar instances of shrubs of this Order, and contain the poisonous principle to a great extent in their leaves. These leaves should be used in confectionery with great caution, as the dangerous principle contained in Laurel-water has proved fatal in some cases. The fruit, however, of the Cherry Laurel is quite harmless, though not of particularly good flavour. This plant was first introduced into England from Asia Minor, and called the Date of Trebizond, from the use of its berries in that city, in the neighbourhood of which it grows wild. Roses, Hawthorn, Flowering Plum, Apple, and other trees, are also among the fragrant and delightful plants furnished by this Order to the garden.

The plants of the Rose Tribe afford, by their variously formed fruits, a facility of arrangement to the botanist, and are divided into five sub-orders, or groups.

Sub-Order I. Almond Group (*Amygdaleæ*).

In this group the calyx is inferior, and soon falls off; the pistil is solitary; and the fruit, when ripe, is a drupe—that is, a fleshy or juicy pulp, with an external rind or cuticle, and one seed in the midst enclosed in a hard case. They are shrubs or trees, with simple leaves, and stipules free from the leaf-stalk; the bark often yields gum, and prussic acid usually abounds in the seeds and leaves. The Laurel belongs to this group, as does the beautiful Almond-tree, the first in the spring to adorn our shrubberies with its flowers, and which is connected with the associations both of Sacred Writ and of

oldest poetry. The classic poet could predict the future crop from its bloom.

> "Mark well the flowering Almond in the wood:
> If odorous blooms the bearing branches load,
> The glebe will answer to the sylvan reign,
> Great heats will follow, and large crops of grain;
> But if a wood of leaves o'ershade the tree,
> Such and so barren will the harvest be."

The bitter oil of almonds is well known to be poisonous; but in the ordinary form of this, as in many of the seeds of this group, the prussic acid exists in so small a proportion to the sugar, mucilage, and other harmless materials which compose them, that they may be safely used in cookery. Some of our best confectionary and liqueurs are flavoured by these kernels. The poisonous properties of the seeds or leaves are thought by chemists not to exist ready formed in these parts of the plant, but to be developed only when they are broken up, and principles of a different kind seated in distinct cells are brought into contact with one another, or with water.

1. PLUM and CHERRY (*Prúnus*).—Nut of the drupe smooth, or slightly seamed. Name from the Greek *prouné*, a plum; *Cérasus*, a name given to one division of the genus, is from Cerasus, a city of Pontus.

Sub-Order II. MEADOW-SWEET GROUP (*Spirææ*).

This division contains a small number of herbaceous or shrubby plants; they bear their seeds in dry erect capsules, opening at the side, termed follicles. Several species, as the herbaceous Meadow-sweets, make attractive garden plants. The so-called *Spiræa japonica* does not belong to this family, but to the saxifrages, its proper name being *Astilbe japonica*.

2. MEADOW-SWEET and DROPWORT (*Spiræa*).—Calyx 5-cleft; stamens numerous; follicles from 3 to 12, bearing few seeds. Name of Greek origin.

Sub-Order III. STRAWBERRY GROUP (*Dryadeæ*).

In this division there is considerable variation in the form of the fruit. In all cases the calyx is permanent, and contains a number of nut-like seeds, with or without awns, placed on a pulpy, spongy, or dry receptacle; in the Bramble each grain is enveloped in pulp, the fruit being a collection of little drupes. In Agrimony alone there are but two seeds, which are enclosed in a bristly, hardened calyx. This division is composed chiefly of herbs; but a few shrubs are found in it. They are all free from any unwholesome properties, and our Strawberries, Raspberries, and Blackberries are common instances.

3. MOUNTAIN AVENS (*Drýas*).—Calyx in 8—10 equal divisions, which are all in one row; petals 8—10; styles finally becoming feathery; tails not hooked at the extremity. Name from the Greek *drys*, an oak, from some imagined similarity in the leaves of the two plants.

4. AVENS (*Géum*).—Calyx 10-cleft, in 2 rows, the outer divisions smaller; petals 5; styles finally becoming jointed; awns hooked at the extremity. Name from the Greek *geuo*, to taste.

5. CINQUEFOIL (*Potentilla*).—Calyx 10-cleft, in 2 rows, the outer divisions smaller; petals 5; seeds without awns, on a dry receptacle. Name from the

Latin *potens*, from some powerful virtues supposed to exist in some of the species.

6. SIBBALDIA.—Calyx 10-cleft, in 2 rows, the outer division smaller; petals 5; stamens 5; seeds about 5, without awns, on a dry receptacle. Named after Robert Sibbald, a Scottish naturalist.

7. MARSH CINQUEFOIL (*Cómarum*).—Calyx 10-cleft, in 2 rows, the outer division smaller; petals 5; seeds without awns, on an enlarged spongy receptacle. Name from the Greek *cómaros*, anciently applied to another plant.

8. STRAWBERRY (*Fragária*).—Calyx 10-cleft, in 2 rows, the outer division smaller; petals 5; seeds without awns, on an enlarged fleshy receptacle. Name from the Latin *fragum*, a strawberry; that being derived from *fragrans*, fragrant.

9. BRAMBLE (*Rúbus*).—Calyx 5-cleft; petals 5; fruit, an assemblage of small drupes, arranged on a spongy receptacle. Name from the Latin *ruber*, red.

10. AGRIMONY (*Agrimónia*).—Calyx 5-cleft, top-shaped, covered with hooked bristles; petals 5; stamens about 15; seeds 2, enclosed in the tube of the hardened calyx. Name of Greek origin.

Sub-Order IV. BURNET GROUP (*Sanguisorbeæ*).

In this group the calyx is cleft into from 3 to 8 divisions; the stamens are usually few in number, and the petals are absent; one or two nut-like seeds are enclosed in the hardened tube of the calyx. These plants are chiefly herbs or shrubs, often with compound leaves.

11. LADY'S MANTLE (*Alchemílla*).—Calyx 8-cleft, in 2 rows, the outer divisions smaller; petals none; stamens 1—4, opposite the smaller divisions of the calyx; seeds one or two enclosed in the dried calyx. Name, from its imagined worth in alchemy.

12. BURNET (*Sanguisórba*).—Calyx 4-cleft, coloured (not green), with 2—4 scale-like bracts at the base; petals none; stamens 4; stigmas tufted. Name from the Latin *sanguis*, blood, and *sorbeo*, to stanch, from its supposed properties.

13. BURNET-SAXIFRAGE (*Potérium*).—Stamens and pistils in separate flowers; flowers in heads; calyx 4-cleft, coloured, with 3 bracts at the base; petals none; stamens numerous; stigma tufted. Name from the Greek *potérion*, a drinking-cup, from the use of the plant in the preparation of a celebrated beverage.

Sub-Order V. ROSE GROUP (*Roseæ*).

Calyx urn-shaped, fleshy, terminating in 5 segments; petals 5; stamens numerous; fruit consisting of a number of nut-like hairy seeds, enclosed in the tube of the calyx. The plants are prickly shrubs, with pinnate leaves. Neither the beauty nor fragrance of the Rose tribe need be insisted on here. To the Rose our gardens owe much of their beauty, while our summer hedges are rendered sweet and attractive by the wild Dog-roses, of red or white hue, which are scattered among the leafy boughs. Rose-water, attar of roses, and conserve of roses, are yielded by preparations of the petals and the hips.

The flowers of *Rosa gallica* and *Rosa damascena* are collected for making both infusions and confections, and rose-water and attar of roses are furnished chiefly by *Rosa centifolia*.

14. ROSE (*Rósa*).—Calyx urn-shaped, contracted at the mouth, and terminating in five leaf-like divisions; petals 5; stamens numerous; seeds numerous. Name from the Latin *rosa*, which was taken from the Greek *rhodon*, a rose.

Sub-Order VI. APPLE GROUP (*Pomeæ*).

In the plants in this group, the petals are several, the leaves alternate, simple, or divided; seeds one or more. The fruit is a pome, the calyx having gradually enlarged into a fleshy or mealy fruit, in the centre of which are five cells, which are horny, as in the core of the Apple, or bony, as in that of the Medlar. It consists of trees, many of which furnish us with important fruits, as the Apple, Pear, Medlar, and Quince. The leaves of several plants of this group contain prussic acid, and occasionally this substance is found in the flowers, bark, and seeds.

15. PEAR, APPLE, SERVICE, and MOUNTAIN ASH (*Pýrus*).—Calyx 5-cleft; petals 5; styles 2—5; fruit fleshy, or juicy, with 5 horny 2-seeded cells. Name from the Latin *pyrus*, a pear.

16. MEDLAR (*Méspilus*).—Calyx 5-cleft, divisions leaf-like; petals 5; styles 2—5; fruit fleshy, top-shaped, terminating abruptly, with the ends of the hard cells exposed. Name from the Greek *mespile*, a medlar.

17. HAWTHORN (*Cratægus*).—Calyx 5-cleft, divisions acute; petals 5; styles 1—5; fruit oval, or round, concealing the ends of the bony cells. Name from the Greek *kratos*, strength, in allusion to the hardness of the wood.

18. COTONEASTER.—Calyx top-shaped, with 5 short teeth; petals 5, small, erect; stamens numerous, erect; fruit top-shaped, with its nuts adhering to the inside of the calyx, but not joined in the centre.

1. PLUM AND CHERRY (*Prúnus*).

1. **Common Plum, Bullace, and Sloe** (*P. communis*).—Fruit covered with bloom; young leaves rolled together; flower-stalks single, or in pairs; leaves elliptic or lanceolate, and somewhat egg-shaped, rather downy beneath. Plant perennial. In the form sometimes termed *P. spinosa*, the Sloe, the branches are spinous, the flower-stalks and leaves smooth; in the variety termed *P. insititia*, the Bullace, the branches are straight and slightly thorny, the flower-stalks and under sides of the leaves downy; in the Wild Plum, *P. domestica* of some writers, the flower-stalks are smooth, and the older leaves smooth beneath, while the branches are without thorns. Some botanists treat these three as distinct species; but they appear to be all so closely allied as not to admit of accurate specific distinction. All lovers of wild-flowers welcome the Blackthorn spray, when its black, woody, leafless boughs are whitened with the snowy blossoms. We may wander forth to see them even as early as March, when winds are blowing, and whirling the few dried leaves which are yet left of the multitude which strewed the pathway of the wintry wood. There is a wild music among the boughs, as they

1. SLOE.
   Prunus communis.
2. BULLACE.
   P. insititia.
3. PLUM.
   P. domestica.
4. BIRD CHERRY.
   P. padus.
5. WILD CHERRY.
   P. avium.

bend downwards in graceful motions, while the thrush and the blackbird are singing to the rich accompaniment. Young flowers peep up from among dry leaves; but as yet no flowering tree or shrub enlivens the wood, save the Blackthorn. Old country people call the winds of March the black winds, and say that the Blackthorn is so called because it flowers at that season; but there is reason enough for its name in the dark wood of the boughs, contrasted, too, as it is by the flowers. A cold March is, however, called in villages a Blackthorn winter. Graham thus alludes to the Sloe:—

"What though the opening spring be chill,
Although the lark, check'd in his airy path,
Eke out his song, perch'd on the fallow clod
That still o'ertops the blade? although no branch
Have spread its foliage, save the willow-wand,
That dips its pale leaves in the swollen stream?
What though the clouds oft lower? these threats but end
In sunny showers, that scarcely fill the folds
Of moss-couch'd violet, or interrupt
The merle's dulcet note, melodious bird:
He, hid beneath the milk-white Sloe-thorn spray,
Whose early flowers anticipate the leaf,
Welcomes the time of buds, the infant year."

The Blackthorn bush is very frequent in our woods, coppices, and hedges, gradually acquiring its leaves in April and May, so that when the flowers are disappearing, it is clad in delicate verdure. These leaves have been dried for tea, and mixed in large proportions with the Chinese leaf. "From the result of a Parliamentary investigation, in 1835," says Professor Burnett, "it appears that upwards of four million pounds of fictitious tea are on an average commonly made in this country, and used to mix with that brought here from China. Within a few years this illicit practice, which had previously been carried on by stealth, was attempted to be legalized by taking out a patent for the preparation of British leaves as a substitute for tea, and an extensive manufactory established for this purpose." It soon became notorious, however, that this prepared leaf was purchased and mingled with the tea sold as Chinese, and it was consequently suppressed; a large quantity, detected in the progress of preparation, was burned.

The dark-purple fruit, the Sloe, is well known to every schoolboy, nor is its austere flavour unpleasing to "boyish appetite." Its rich dark hue has made it a favourite comparison; and eyes as black as Sloes have been sung by poets without number. Chaucer alludes to its colour:—

"Ful crooked was that foule' sticke,
And knotte here and there also,
And blacke as berrie of any Slo."

In early days we were wont to gather these fruits in large numbers, and, enclosing them in a bottle, to bury them deeply in the earth till Christmas, when they formed a preserve, which, to childish taste, at least, was delicious, though its astringent property must render it a very objectionable one to be eaten in large quantities. Many a time, too, the roasted Sloe, prepared by placing a branch over the fire, serves as a luxury to country children, though the process usually fails to remove the austerity of the fruit, since it is seldom thoroughly roasted. The Sloe has been very extensively employed

in adulterating port wine, and books openly avowing this adulteration, and recommending various ingredients and methods of preparing it, have been, a few years since, published in England. Two gallons of sloes was one of the articles directed to be employed for this purpose. The Rev. C. A. Johns remarks, in his volumes on the Forest Trees of Britain—"So impudently and notoriously is this fraud carried on in London, and so boldly is it avowed, that there are books published, called Publicans' Guides, etc., in which recipes are given for the manufacture of port wine from cider, brandy, and sloe juice, coloured with tincture of red sanders and cudbear. This villainous compound may be concocted into 'Old Port,' in a few days, by the admixture of catechu. The corks may be stained by being soaked in a strong decoction of Brazil wood and a little alum; and even bottles are manufactured to contain a sufficient quantity of lime to be sensibly acted on by the acid, and to produce a counterfeit crust." Scarcely any article of human consumption has been so much mingled with spurious ingredients as wine, and few adulterations have been more deleterious in their nature than some of these. Beckmann says, "The inventor of these practices deserves, for making them known, as severe a reprobation as Berthold Schwartz, the supposed inventor of gunpowder." The thickened juice of the unripe sloe is used in Germany for making an ink for marking linen, and its tracings are permanent. In France the sloes in a green state are prepared as olives, and eaten at dessert; and in Russia the matured fruit is crushed and made into a fermented liquor.

The Blackthorn has some straight stems, and these having no thorns at their lower parts, are sometimes used as walking-sticks, and afford by the marking of their knots a pretty material for this purpose; but the wood is not often sufficiently large to be of much use. The ordinary height of a Sloe-bush is about two or three feet, though in some instances the stem is fifteen or twenty feet high. Loudon mentions that about Montargis the tree is called *Mère du bois*, because it has been remarked there that when it was growing on the borders of woods, "its underground shoots, and the suckers which sprung from them, had a constant tendency to extend the wood over the adjoining forests; and that if the proprietors of lands near the forests where the Sloe-thorn formed the boundary did not take the precaution of stopping the progress of its roots, these would in a short time spread over their land, and the suckers which arose from them would, by affording protection to the seeds of timber trees, which would be deposited among them by the winds or by birds, ultimately, and at no great distance of time, cover the whole with forest trees."

The bark of the Sloe-tree is taken medicinally, and forms no bad substitute for the Jesuits' bark; it is also used for tanning leather.

The variety termed *Prunus insititia* is the Bullace; it has often scarcely any spines, and is then chiefly to be distinguished by having more downy leaves. The fruit is also much larger, and the leaves appear with the flowers in April and May. It is not nearly so common a plant as the Blackthorn. From this bush, or from the variety called Wild Plum-tree (*Prunus domestica*), we derive the cultivated Plums. The latter tree is seldom found wild, and resembles the Bullace, but that it has no spines on its branches, and the under part of the leaf is not downy, except in some cases, where a

slight degree of down is on the midrib. These three forms of wild fruit trees apparently run into each other. There are hundreds of varieties of the garden and orchard fruits. Apricot Plums, Greengages, Magnum Bonum, Mussel, Orleans, Catherine, and a number of others, are well known; and many sorts of Bullace and Damson are in general culture. It is probably the frequent habit of eating these fruits in a half-ripened state which has led to the belief that they are unwholesome; but well-ripened plums, as well as the French plums and prunes which we receive in a dried state from the Continent, are valuable additions to the dessert. Plum-trees generally thrive best in an open situation. Their wood is useful to turners, and the bark yields a good yellow dye. The French call the Plum-tree *Le Prune*. It is the *Prugnon* of the Italians, and the *Pflaumen* of the Germans.

* *Fruit without bloom, young leaves folded together.*

2. **Bird-cherry** (*P. pádus*).—Flowers in drooping clusters; leaves narrow, inversely egg-shaped, or oval, smooth; fruit oblong. The Bird-cherry is a handsome shrub, or small tree. It grows in woods and coppices, being most frequent in the north; and its dark green leaves are much like those of the Portugal laurel, and notched with large serratures, which are again serrated. The white flowers appear in May, and are, as well as the foliage, so ornamental, that the plant is often placed in shrubberies. In many parts of Lapland it is one of the most attractive trees of the landscape, and Von Buch describes it on the borders of the Muonio river as of great beauty, growing among the dark spruce firs, and the lighter tinted willows, and sombre alders. The small cherries, while in their unripened state, are of a rich red tint, but when matured they are black. They are eaten by birds, and the tree is on this account called Fowl-cherry. Cluster-cherry is another name of the plant, and this fruit is the Hagberry of the Scotch. Though positively nauseous to most palates, yet it is commonly eaten in Siberia, and when steeped in spirits, it imparts to them the flavour of some of the foreign liqueurs, as it contains, in some degree, the principle of prussic acid. In Gerarde's time, the Kentish Cherry-growers were accustomed to graft Cherries on it; and it appears formerly to have been a much more frequent plant in the Kentish woods than it now is. The tree is very leafy, and the wood so beautifully veined, that it is much used in France for ornamental cabinet-work.

3. **Wild Cherry**, or **Gean** (*P. ávium*).—Flowers in umbels, with cleft petals; leaves drooping, oblong, somewhat egg-shaped, serrated; calyx-tube contracted beneath the entire sepals; fruit heart-shaped. This is a large and beautiful tree, frequent in woods and hedges, making them gay with its white and slightly fragrant flowers, which tower in May above the snowy clusters on the Hawthorn-bush. Many a joyous bird finds shelter on its leafy bough, or comes to pick the young buds, and stays to sing his thanksgiving for the meal. In summer the small black or red cherries furnish a no less welcome repast to the birds which are shortly to depart to warmer regions. In a still later season the tree is rendered conspicuous by the rich red tint of its leaves. If we except those of the Cornel, which are usually of deeper red mingled with purple, we know of no native tree whose foliage

exhibits so much of that crimson and orange tint so common in the woods of America, and so comparatively rare in those of our own land. This is generally called the Gean Cherry, and in Kent the fruits are termed Gaskins; they are slightly bitter, though not disagreeably so, and the large stones adhere very closely to the fleshy part of the cherry. The name of Gaskin should probably be Gascon, as that of Gean appears to be a corruption of Guignes; and another of its names, Merries, is probably also from *Merisier*, by which it is commonly called in France, and which is said to be derived from *amère*, bitter, and *cerise*, cherry. The French call the tree also *Cerisier*, and in some of our country places it is termed Blackhead Cherry. The Black Corone Cherries and the Gean Cherries of the garden are all varieties of it.

This tree is, when fully grown, from twenty to thirty feet in height, and the gum which exudes from it is considered to be equal in value to gum-arabic, though differing from it in its chemical qualities. It is very nutritious, and Hasselquist relates that, during a siege more than one hundred men were kept alive for nearly two months without any other nutriment than that of a small piece of gum sometimes taken into the mouth and then suffered gradually to dissolve. "It is remarkable," says Baxter, "that the barks of all the trees yielding this bland mucilaginous substance are highly astringent. That of the Acacia itself, from a certain species of which gum-arabic is obtained, is used in India for tanning." The bark of our Wild Cherry is very astringent, and its wood is very tough and close-grained. This is used by turners, and being of a bright red hue, and susceptible of a high polish, it is a valuable material for ornamental furniture, which is scarcely inferior, either in beauty or durability, to that made of mahogany. The tree is more frequent in the woods of France than with us; and the French plant it more extensively, and use its wood for a greater variety of purposes, than the English. It is sometimes grown in Scotland for the sake of its timber. Of the various uses of the fruits little need be said. To them we are indebted for puddings, tarts, and preserves; they are used also in flavouring various liqueurs; and ratafia, maraschino, kirchwasser, wine, brandy, and vinegar, as well as marmalade and lozenges, are improved by the addition either of their juicy portion, or their kernels.

The Rev. C. A. Johns, in his "Forest Trees of Great Britain," remarks: "In England, cherries are to be considered rather as a luxury than a staple article of food; but on the Continent, particularly in France, they are highly prized as supplying food to the poor; and a law was passed in that country in 1669, commanding the preservation of all Cherry-trees in the royal forests. The consequence of this was, that the forests became so full of fruit-trees that there was no longer room for the underwood; when they were all cut down, except such young ones as were included among the number of standard saplings required by the law to be left to secure a supply. This measure was a great calamity to the poor, who during several months of the year lived, either directly or indirectly, on the fruit. Soup made of cherries, with a little bread and a little butter, was the common nourishment of the wood-cutters and charcoal-burners of the forest. Of late years, the practice of planting Cherries by the road-side has been extensively adopted in Germany,

and one may now travel from Strasburg to Munich, a distance of two hundred and fifty miles, through an avenue of Cherries, interspersed with walnuts, plums, and pears. By far the greater part of the first are ungrafted trees, which succeed in the poorest soil, and in the coldest and most elevated situations. A large portion of the tract of country which bears the name of the Black Forest, is an elevated, irregular surface, with no other wood than the Cherry-trees which have been planted by the road-side."

Those who live in our Cherry counties, as in Kent, are accustomed to hear much regret expressed when this fruit is not plentiful, for in the fertile seasons the gathering the cherries from the trees is a source of employment to women, and even children, who ascend the slight ladders to pluck the ruddy fruit. The orchard is a pleasant and cheerful scene of labour, and the baskets of glittering cherries, packed up with sprays of green bracken above and around them, are bright and beautiful objects, and are often carried off amid the merry songs or jocund laughter of the gatherers. Many of the poor also gain a temporary addition to their means of support by selling the fruit; and little cottage children, to whom luxuries are rare, hail the cheap cherry pudding with great delight. This fruit was first extensively cultivated in Kent in the time of Henry the Eighth, when orchards near Teynham were stocked with the trees. The first orchard then planted was called the New Garden; and the name of the fruiterer who introduced this culture was Harris, and not Haines, as is generally stated. Michael Drayton, the tediousness of whose poem, the "Poly-olbion," is somewhat compensated by the singular accuracy of its detail, as well as by the general evenness of the versification, alludes to these Cherry-orchards. In his praise of the "dear soil" of Kent, he says:—

> "When Thames-ward to the shore which shoots upon the rise,
> Rich Tenham undertakes thy closets to suffice
> With cherries which we say the summer in doth bring,
> Wherewith Pomona crowns the young and lustful Spring;
> Whose golden gardens seem the Hesperides to mock;
> Nor here the damson wants, nor dainty Apricock."

Peachem, in his "Emblems," published in 1612, thus describes an English fruit-garden:—

> "The Persian peach and fruitfull quince,
> And there the forward almond grewe,
> With cherries knowne no long time since;
> The winter warden, orchards' pride,
> The philibert that loves the wall,
> And red queen apple, so envide
> Of school-boys passing by the pale."

This culture of the Cherries was, however, at this time only reintroduced into England. It is pretty certain that the tree was planted here in the time of the Romans. We know that the word *cerasus* is derived from Cerasus, a city of ancient Pontus, in Asia, now called Kerasoun. The Cherry-tree was brought into Europe from thence, by the Roman general, Lucullus, 67 B.C., at the termination of the Mithridatic war. When a triumph was afforded to this warrior, he placed the Cherry-tree in the most conspicuous station among the royal treasures, justly deeming it of more real worth to the country than the spoils of gold, or silver, or gorgeous array, won by

conquest. A hundred and twenty years after, this tree was grown in Britain That the fruit was well known in early times in this country is evident, from lines in Gower's "Prologue":—

"And so hope cometh in at laste,
When I none other foode knowe,
And that endureth but a throwe,
Right as it were a cherie feste:"

while near the same early period we find Chaucer describing a garden thus:—

"And manie homely trees were there,
That peches, coines, and aples bere;
Medlers, plommis, peres, chesteineis,
Cherise, of which manie one faire is;
Notis, and aleis, and bolas,
That for to sene it was solas;
With manie high laurer and pine,
Was ranged clene all that gardine,
With cipris and with oliveris,
Of which that nigh no plenty here is."

Our Gean Cherry is, by many writers, termed *Prunus cerasus*, or *Cerasus vulgaris*, but the former name is now more generally applied to the Morello Cherry. Various kinds of Cherry are largely grown on the Continent, and Cherries are associated there with many common proverbs and old legends. The German says, that the cuckoo never sings till he has thrice eaten his fill of cherries; but if so, the bird must have made his meals on the half-ripened fruit, unless his first song is later in the year than in our country. There are legends which tell how our Saviour gave a cherry to St. Peter, and with the fruit gave, too, a gentle counsel not to scorn small things; but we forbear to put faith in tale or legend connected with Him of whose life and words we know so little, save that which has been taught in Holy Writ. Even yet, however, an annual festival at Hamburgh tells of an interesting incident which occurred in connection with cherries. This is called the Feast of the Cherries; and on this occasion, little children walk about the streets carrying boughs, from whose green leaves glisten the ruby fruits. It is an old observance, and one which tells of a touching story. In the year 1432, the Hussites were planted in battle array around the city of Hamburgh, threatening its immediate destruction, when one of the citizens, named Wolf, proposed that all the children from seven to fourteen years of age should be clad in mourning, and sent out to plead with the enemy. The chief of the Hussites, Procopius Nasus, had human sympathies, and the sight of these innocent and helpless beings perchance reminded him of loved and innocent ones far from the scene of danger. To the honour of the warrior, his heart forbade all resistance to the appeal, and, promising to spare the city, he sent back the children, after having regaled them with cherries. With loud shouts of victory, the happy band returned homewards, crowned with green leaves of the tree, and waving in their hands the boughs laden with cherries. Long before Shakspere had expressed the truth, the thoughtful man had discovered, that—

"One touch of nature makes the whole world kin."

The Romans possessed only eight varieties of Cherry; but upwards of

two hundred are now known, and more than fifty commonly cultivated in Britain; affording thus one of those instances of a fact familiar to the botanist, of the use of culture, and the triumphs of skill and industry. Besides the Bigarreaux, the Black Eagles, and Bleeding Hearts, the May-Dukes, Arch-Dukes, Honey, and Kentish varieties, the All Saints and Weeping Cherries, we might adduce many another which contributes to the valuable supply of our tables. Many Cherry-trees, too, of great beauty are reared entirely that their snowy flowers and glowing fruits may serve as ornaments to the garden-wall or shrubbery, or on account of the wood furnished by their trunks and boughs. The Perfumed Cherry (*Prunus mahaleb*) bears a profusion of beautiful flowers, dispensing far around its odour, which resembles that of the Sweet Garden Clematis. Its shining black fruits are so hard, that they are often pierced for rosaries. The wood is also fragrant, and is used by the French in cabinet-work, especially in the village of St. Lucie, near Commerey, hence it is often called *Bois de Commerey*. *Prunus capricida* is the Goatbane of Nepaul, and contains so much prussic acid, that it is said to destroy goats which feed upon it.

4. **Morello Cherry** (*P. cérasus*).—Flowers in nearly sessile umbels; leaves not drooping, inversely egg-shaped, somewhat oblong, or egg-shaped and somewhat lanceolate, crenate and serrate, smooth; calyx-tube not contracted. This is an erect bushy shrub, about six or eight feet in height, which throws out to a considerable distance a number of underground shoots. The erect leaves give the plant a different aspect altogether from the Wild Cherry, the whole foliage having a stronger, firmer character. The plant bears white flowers in May, and the cherries are red and very acid. The inner scales of the flower-bud are leafy, and the outer scales of the leaf-bud are erect. It is the origin of the Morello Cherry of the garden; it is very doubtful if it is truly distinct from the preceding species. It grows in woods and hedges in various parts of England. It never in a wild state attains the height of the other Cherries, and rarely exceeds eight feet.

2. Meadow-sweet, Dropwort (*Spiræa*).

1. **Meadow-sweet** (*S. ulmária*). — Herbaceous; leaves pinnate, the alternate leaflets smaller, white with down beneath, terminal leaflet very large, and lobed; flowers in compound cymes. Plant perennial. The generic name of *Spiræa*, given because the flowers which compose the genus were fitted for garlands, is a very old one, as Pliny called some plant *Spireon*, garland-flower, and the name was transferred to this genus. In all probability, too, a plant so sweet and so common was gathered in summer-time from our own meadows, in days when chaplets were in general use. "Often," says a learned writer, "did Chepe, and Cornhyll, and Byshopgate, resound with the waytes playing, and the quire singing *Salve feste dies*, as the fellowshyppe of clerkes went their procession, two and two together, each having a surplice and a riche cope, and garland." Perchance this flower, in the olden time, was strewed in the church for the bride to walk upon, and hung over the pew where she lately sat, when death had changed her bridal suit to the shroud.

The Meadow-sweet, or Meadow-queen, as it is often called, is one of the loveliest of wild flowers. Its white blossoms, tinged with yellowish green, are in crowded clusters, and are so light and feathery, that the slightest wind ruffles them, and while it wafts their odour, bids them nod and bow gracefully before it. The stem is usually about two or three feet high, but occasionally it is a foot higher. Everyone admires

> "The almond-scented Meadow-sweet, whose plumes
> Of powerful odour incense all the air."

The French call it *La reine des prés*, the Germans *Wiesenkönigin*, and the Dutch language, not always harmonious in its terminations, has for this plant the pretty name of *Reynette*. It is the *Ulmaria* of the Spanish and Portuguese, and is called by the Russians *Medunischnik*. The plant is found pretty generally throughout Europe, and in some of the northern countries of Asia various species of *Spiræa* are very ornamental and frequent. A gregarious species, the *Spiræa kamschatika*, is called by the people of Kamschatka *Schalameynik*, and throughout the summer quite characterises the vegetation of that land by its abundance and peculiar appearance. It is a plant of wonderfully rapid growth, acquiring in the course of a few weeks the height of ten feet, and disappearing in autumn, without leaving a single trace, as one frosty night will level the whole with the ground. Its stems display in July their white bunches of flowers, which subsequently acquire a gray tint.

The blossoms of the Meadow-sweet appear in July and August, when they quiver beside many a stream, or grace many a damp wood or meadow. The fragrance has much of that odour of prussic acid which is found in Sloe, Almond, and several other flowers contained in the order. In the open air it is not only delicious, but harmless; but it is very deleterious in a close room, and has proved the cause of severe illness to some who slept with it in their apartment. The whole plant is bitter and astringent, and was formerly used as medicine, and its properties are, doubtless, tonic. A very pleasant and fragrant water may be distilled from its flowers. The roots are very much sought out by swine, and the dried knobs, beaten or ground with meal, are said by Linnæus to afford no bad substitute for flour. The blossoms are too fragile to survive long after being gathered.

> "In thy wild gatherings shouldst thou chance to meet
> With the white Meadow-sweet,
> Inhale its honeyed breath, and pass it by;
> Bind it not in thy wreath, for it would die,
> Pluck'd from its river-home;
> And the poor sighing bee would vainly roam,
> Wandering about its desolate retreat.
>
> "But let it live, and by to-morrow's dawn,
> On its soft bosom borne,
> Thou shalt behold the little buds thy care
> From early death within its breast did spare;
> And in the evening hour,
> As there thou passest, shall the grateful flower
> Lower before thee bend its waving form."

The old herbalists had much to say in praise of the Mead-sweet, as they called it. It was of power to "alter and take away fits of the ague," and to

1. WILLOW LEAVED SPIRÆA
   Spiræa salicifolia.
2. COMMON DROPWORT
   S. filipendula.
3. MEADOW SWEET
   S. ulmaria.
4. MOUNTAIN AVENS
   Dryas octopetala.
5. COMMON AVENS
   Geum urbanum.
6. WATER AVENS
   Geum rivale.

Pl. 68.

"make a merry heart," for which purpose leaves and flowers were to be used. It cured, besides, so many forms of sickness, that he must indeed have been in evil case who was like one whom Chaucer described—

"Ne drinke of herbes may ben his helping."

2. **Common Dropwort** (*S. filipéndula*).—Herbaceous; leaves pinnate, with alternately smaller leaflets; leaflets all oblong, deeply cut and serrate; flowers in a panicled cyme. Plant perennial. We do not find this flower in company with the last species, for it thrives in places too dry for the Meadow-sweet, and occurs on pastures where the soil is of chalk or gravel. It usually grows on a stem about a foot in height; and its flowers, which expand from July to September, form a smaller and flatter tuft, and are individually larger and whiter than those of the Meadow-sweet. Before expansion, they are of a beautiful deep rose-colour, and, mingling with the fully blown and snowy blossoms, are very pretty, but they are not fragrant. The leaf is altogether different, too; for it is cut into many fine segments, and is of a rich dark green.

3. **Willow-leaved Spiræa** (*S. salicifólia*). — Shrubby; leaves oval, somewhat lanceolate, unequally serrated, smooth; flowers in dense, erect, terminal racemes. Plant perennial. This species, with its willow-like leaves, is not truly wild, but is naturalized in several woods in the North of England and Scotland, and is especially common in North Wales. Its clusters of rose-coloured or flesh-coloured flowers are found in July, and, though compact, look very light, from the circumstance of the numerous stamens being longer than the petals. The shrub is so often planted in gardens and shrubberies, that it is doubtless, in many cases, an outcast from some cultured spot. Several species of the genus are ornamental shrubs, and the Siberian Spiræa (*S. lævigata*) has fragrant leaves, which form a tolerable substitute for tea.

3. Mountain Avens (*Dryas*).

White Mountain Avens (*D. octopétala*). — Leaves oblong, deeply cut with roundish serrated notches; sepals three or four times as long as broad, more or less pointed; petals 8. Plant perennial. This is not a common plant, for it belongs chiefly to the mountainous regions of England, Scotland, and Ireland, growing especially on limestone soils; in the west and north of Ireland, however, it grows near to the sea-level. It may easily be known from any other plant of the order by its oblong, deeply-cut evergreen leaves, on stalks, which are quite white on the under surface with thick woolly down. The woody stem is like those of mountain flowers in general, raised but a small height from the ground, or lying upon it. The large white blossoms unfold in June and July. The Germans call the plant *Silberkraut*, the French *Driade*, the Dutch *Hertenkruid*, and in Iceland it is termed *Holta-soleyg*.

This Avens has all the usual characteristics of plants which grow on mountain heights. The large blossoms and short stems would at once suggest to those accustomed to elevated regions that this was a mountain flower. Alpine plants grow more socially than almost any others, so that one kind of

plant may often be found forming extensive tufts or patches several feet in circumference. Meyen says that this alpine mode of growth is nowhere more striking than in the Alpine Flora of the Cordilleras, where the plants first fasten on projecting rocks, and where, in the course of time, their outspread branches cover the surface of rocks twelve or even twenty feet square. He remarks that frequently in these regions vast blocks of rock are wholly overgrown with a thick and extremely hard turf, which is composed of a single species of plant, and the prostrate branches have formed so hard and entangling a mass, that it is extremely difficult to cut through it, even with the sharpest instrument. The stem of such a family of plants, which is doubtless often a monument of many centuries, seldom, he says, attains the length of a foot, but is sometimes as much as five or six inches in thickness, and has from its base an infinite number of twigs and branches. The higher we ascend on the mountains of our own land, till we gain the regions of perpetual snow, the more these characteristics of vegetation become apparent. Most Alpine plants are perennial, and the root, which is destined to endure a rigorous winter, several months long, is usually very woody, and well shielded by a number of skins. Alpine plants of all countries are remarkable for their large flowers, which render them very conspicuous. The beautiful primroses and auriculas, gentians, saxifrages and Avens, are all showy flowers, and combine with many yellow and white composite flowers to render the spot very beautiful. Meyen remarks that he cannot fix on any particular colour as predominant in the Alpine Flora. It has long been said that white was the general hue of the flowers; but the learned German botanist, Schouw, has proved that this is not the case in the mountains of Europe; and Meyen adds, that on the heights of the Cordilleras of South America he rarely met with a white flower, and at the limits of perpetual snow never found one of that hue; though he saw blue, yellow, and violet blossoms even there in abundance. What heart cannot respond to the expressions of Coleridge, when, at Chamouni, he marked the brilliant blue gentians glittering on the very verge of the snow-clad peaks?—

> "Ye ice-falls, ye that on the mountain's brow
> Adown enormous ravines slope amain—
> Who bade the sun
> Clothe you with rainbows? Who with living flowers
> Of loveliest blue spread rainbows at your feet?
> God! let the torrents like a shout of nations
> Answer, and let the ice-plains echo, God!
> God! sing ye meadow-streams, with gladsome voice,
> Ye pine-groves, with your soft and soul-like sounds;
> And they too have a voice, yon piles of snow,
> And in their perilous fall shall thunder, God!
> Ye living flowers that skirt the eternal frost,
> Ye wild goats sporting round the eagle's nest,
> Ye eagles, playmates of the mountain storm,
> Ye lightnings, the dread arrows of the clouds,
> Ye signs and wonders of the elements,
> Utter forth, God! and fill the earth with praise."

In all parts of the world the greater number of alpine plants abound in aromatic, bitter, or resinous principles; and it is well known that they

secrete these properties far more powerfully on their native hills than in gardens. So, too, in our gardens, the large flowers gradually diminish, and the plants soon lose much of the dwarfed appearance which is one of the features to which plants of elevated regions owe so much of their peculiarity.

Besides the great development of root and flower, a very singular character of alpine plants is a great imperfection of the leaves. They are said to crumple together, and become puckered on their upper surface, the leaves early acquiring, partly or entirely, a yellowish tint, and also losing the green substance, so as to become membranous. Meyen, in his "Geography of Plants," quotes the opinion of Parrot, "that the peculiar character of alpine vegetation consists in this, that the plants during their whole growth are continually striving not to rise above the ground, and consequently form a short and strong, or crooked and prostrate stalk, on which branches, leaves, and flowers are closely pressed on each other." A large number of alpine plants have also, like the Dryas, wool or hair on their leaves, though some are smooth and leathery.

The matured fruit of the Mountain Avens is an exceedingly pretty object, and looks like a silken plume rising from the flower-cup. Dr. Lindley, in his admirable work, called "Ladies' Botany," says of it, "that as it waves about in the wind, one might fancy it a tuft of feathers accidentally fastened to the flower-stalk. A botanical examination, however," he adds, "soon dispels the illusion, and shows that the appearance is caused by the carpels having preserved their styles, which have become very long, and covered all over with loose silky hair, which has grown since they were young. A similar phenomenon occurs in Virgin's Bower (*Clematis vitalba*), and in the Pasque Flower (*Anemone pulsatilla*); but the most remarkable instance in the production of hairs, so as to change the whole appearance of a part, is met with in the Venetian Sumach (*Rhus cotinus*), which the French call *Arbre à perruque*, or the Wig-tree. This plant is by no means uncommon in shrubberies, shaking its hoary locks at you as the breeze waves the branches and sets the wigs in motion, in the midst of a crowd of blood-stained leaves: for it is in the autumn only that it seems to wear its wig, as in spring and summer it does not want it, and will not put it on."

4. Avens (*Géum*).

1. **Common Avens** (*G. urbánum*).—Flowers erect; awns rigid; calyx of the fruit turned downwards; root-leaves pinnate, with alternate smaller leaflets, and lyre-shaped; stem-leaves ternate; stipules large, rounded, lobed, and cut. Plant perennial. All who love to wander in the green woods and by the hedgerows of England know this common plant, which, however, requires the sunshine, and will only grow well where the trees are not high and thick enough to cast a broad shadow. The yellow flowers appear from June to August, and the stem of the plant is from one to three feet in height. The blossoms are small in proportion to the leaves, and the petals soon fall off, and leave the round spiny ball, which is composed of awned fruits, each ending in a stiff hair bent like a fish-hook, and destined to adhere to the

sheep or other animal which may come near it to browse, or to the clothing of man, and thus be borne away to grace another summer :—

"Each is commission'd, could we trace
The voyage to each decreed,
To convoy to some distant place
A pilgrim seed ;

'As surely charter'd as yon sail,
Like white-wing'd butterfly,
Before the gently drifted gale
That glideth by."

The leaves of this plant are rich glossy green, and grow on long foot-stalks. The flower has several country names, as Goldy, Star of the Earth, City Avens, Wood Avens, and Herb Bennet. This last name is also common in several countries of Europe, as it is the *Benoite commune* of the French, and the *Erba Benedetta* of Italy—all, doubtless, corruptions of the word Benedicta. It was evidently considered in some sort a sacred herb, as we find it associated with old church paintings and church architecture, of which it was a frequent ornament. Whether the ornament is truly intended as a representation of the flower is certainly questioned by some, but the belief that it is so seems very general. Mr. Orlando Jewett, in his "Description of Mural Painting," considers that it referred to this blossom. Alluding to paintings in Berkeley Church, Oxfordshire, which appear to have been executed at four or five different periods, from the close of the thirteenth century to the time of George III., he says: "The most ancient of them is one in the belfry, which occupies a space of about six feet from the level of the original floor on the east wall. The pattern consists of stems, leaves, and flowers, rudely drawn with a brush, in an irregular manner, on the original plaster of the wall. The plant is evidently intended for the *Herba Benedicta*, Herb Bennet, or Avens, which seems to have been a great deal used at this period as an architectural decoration. As the tower, piers, and the trefoil-headed lancet of the belfry appear to be of the time of Edward I., it may fairly be presumed that this painting is coeval with the building of the tower, which is the earliest part of the church. The stems and branches are laid in with brown oxide of iron, very similar to what we now call Indian red; for the leaves and flowers red-lead has been used, as is evident from the atmosphere having in some parts turned them black."

The old herbalists call this plant Cow-wort; and it would well deserve the name of Blessed Herb if it would only cure half the maladies for which they recommend it. One of them describes it as "a good and wholesome herb, excellent for diseases of the chest, by its sweet savour and warming quality; the roots, whether green or dry, boiled in wine and drank, being fit to cure all inward wounds"; while the external application was thought to remove all spots, bruises, and freckles from the face. "The root in the spring time steeped in wine," says this old author, "doth give it a delicate savour and taste, and being drunk fasting every morning, it comforteth the heart, and is a good preservative against plague or any other poison." He adds, "It is very safe, you need have no dose prescribed, and it is very fit to be kept in anybody's house."

Besides the old names already stated, this plant was called *Caryophyllata*, from the clove-like scent of its root; and there is no doubt that the root has both mildly astringent and tonic properties, having been compared in this respect to Peruvian bark. It is still used in country places for giving a relish to various articles of food, and yet more often to some wines made from the different berries which our native land affords. It is also gathered in the spring and put into ale, and not only improves the flavour of the liquor, but prevents its turning sour. Like many another plant, however, it was more valued in the olden time than now, when spices are cheap, and easily procured.

Although it has a long-established repute as being, when infused in fermented liquors, a valuable stomachic, yet Baron Haller says of this root, that if mingled with water, and given, as it formerly was, in malignant fevers, it causes delirium. Its use for putting among linen to preserve from moth, and to impart a pleasant odour, however, is much more general in these days, than for any medicinal purposes; and for this the root should be taken from a dry sunny spot, just at the season when it is coming into flower; for if these conditions are not observed, it will be found to want the aromatic odour for which it has become so celebrated.

2. **Water Avens** (*G. rivále*).—Flowers drooping; awns feathery; root-leaves pinnate, with the alternate leaflets and those at the base smaller; stem-leaves ternate. Plant perennial. This species has altogether a very different habit from the preceding. It is a much shorter and stouter plant, with larger flowers, of a dull purplish hue, veined with darker purple, and the calyx is also deeply tinged with this colour. It is sometimes found very high up mountains, so as to be quite an alpine plant, and it is not uncommon in wet mountainous woods, or on marshy and moory grounds, flowering from May to August. Its root is said to be stomachic, and to be very serviceable as an astringent medicine. Professor Lindley thinks it probable that this is the Indian chocolate, as the plant is much used medicinally in North America. The Canadians administer both species of Geum in agues.

Some botanists enumerate a third species, called *Geum intermedium*, which is not an unfrequent plant in damp woods. Its stem is one or two feet in height; its flowers larger than those of *Geum urbanum*, and smaller than those of *Geum rivále*. The blossoms are in some cases drooping, and in others erect; the heads of fruit usually sessile; but it varies so much between the form of one or the other species, that Sir William Hooker and Dr. Arnott consider it to be a hybrid between the two.

5. Cinquefoil (*Potentílla*).

* *Leaves pinnate.*

1. **Silver-weed** (*P. anserína*).—Stem creeping; leaves pinnate, with alternate smaller leaflets; leaflets numerous, oblong, acutely serrate, silky on both sides; flower-stalks solitary; root perennial. This is one of the prettiest plants of this large genus, and one of our most common flowers. It grows in moist meadows, and is very frequent on banks by the road-side, especially such as are kept verdant by some stream which trickles by. Large

masses of its beautiful leaves, shining and silvery with the silky down which is always to be seen on the under surface in profusion, and which often covers both sides, seem scarcely to need the adornment of the large yellow velvety flowers which, in June and July, stand on short stalks among them. Few plants lose less of their beauty in drying for the Herbarium than this, and little bouquets of the blossoms and foliage, arranged on paper, will retain their beauty for years, and often serve as mementos of friendship, or help to carry away the thoughts to some pleasant spot whence the flower was gathered :—

"The precious things of heaven—the dew
That on the turf beneath it trembled,
The distant landscape's tender blue,
The twilight of the woods that threw
Their solemn shadows where it grew,
Are at its potent call assembled.

"And while that simple plant for me
Brings all these varied charms together,
I hear the murmurs of the bee,
The splendour of the skies I see
And breathe those airs that wander free
O'er banks of thyme and blooming heather."

The silvery foliage is so much relished by geese, that the plant is often called Goose-grass; it is occasionally boiled for the cottage meal. The roots are eagerly eaten by swine. They are somewhat like parsnips in their sweet flavour, though smaller, and paler in colour; and are much relished by children, who roast them over the fire; while the Scottish housewife sometimes boils them for the family dinner. They contain a good amount of nutriment, and in times of scarcity the people of the islands of Tiray and Col have used them for bread, and have been supported for months together almost entirely on this food.

2. **Shrubby Cinquefoil** (*P. fruticósa*).—Leaves pinnate; leaflets mostly 5, oblong, acute, entire, hairy, with margins rolled under; stem shrubby. Plant perennial. This is a rare species, growing among bushes in the rocky parts of Cumberland, Yorkshire, and other northern counties, as well as at Clare and Galway in Ireland. Its stem is three or four feet high, its large yellow flowers growing several together at the end of the stems, and expanding in July and August.

3. **Strawberry-flowered Cinquefoil** (*P. rupéstris*).—Stem erect, forked; leaves pinnate; leaflets egg-shaped, their bases wedge-shaped, serrated, and hairy, from 5 to 7 on the lower leaves, and 3 on the uppermost. Plant perennial. This very rare species bears large white flowers in May and June, and has a stem one or two feet high. Its only recorded British habitat is Craig Breidden, Montgomeryshire.

* * *Leaves digitate.*

4. **Hoary Cinquefoil** (*P. argéntea*).—Stem prostrate, or ascending; leaves quinate; leaflets wedge-shaped, cut, white, and downy beneath, their margins rolled. Plant perennial. Though not a very common species, this is found on many roadsides and pastures, where the soil is of gravel. Its

1 SHRUBBY CINQUE-FOIL.
Potentilla fruticosa.

2 SILVER WEED
P anserina

3 STRAWBERRY-FLOWR C.
P rupestris

4 HOARY C.
P argentea

5 SPRING C.
P verna.

6 ORANGE ALPINE C.
P alpestris.

7 SAW-LEAVED HAIRY C.
P opaca.

8 CREEPING C.
P reptans

9 TORMENTIL.
P. tormentilla

10 WHITE C.
P. alba.

11 THREE TOOTHED C.
P tridentata.

12 STRAWBERRY Lf C.
P. fragariastrum.

small yellow flowers grow several together, at the ends of the stems, in June and July.

5. **Creeping Cinquefoil** (*P. réptans*).—Stem slender, creeping, rooting at the joints; leaves quinate, stalked, their leaflets inversely egg-shaped, tapering at the base, and bluntly serrated; flower-stalks axillary, single-flowered, longer than the leaf. Root perennial. Not one of the genus is more common than this, for it grows on almost every way-side bank, or creeps with slender stem along the meadow grass, or enlivens the side of the dusty road. The yellow flower, of soft and velvet-like texture, expands in June and July, and is often called in the country Yellow Strawberry flower; but, long ere flowers have begun to peep forth from their winter covering, the fingered leaves of this Cinquefoil lie in wreaths on the bank. Even in February we may see them almost fully unfolded, and winding among the rounded leaves of the ground ivy, or the deep crimson foliage of the Herb Robert. The name of *Potentilla*, given on account of the potential virtues which some of the species were supposed to possess, was probably won by this and some nearly allied species; for this is the medicinal *potentilla* of the ancients, and was referred to by one of the oldest writers on plants, Theophrastus. Though none of the genus is deleterious, yet they are by no means possessed of active or potent properties. They are generally more or less astringent and bitter, and this creeping species is still reputed to be a febrifuge, and would doubtless be used as such by modern practitioners but that more powerful drugs are now more easily obtained. The writers on plants in Queen Elizabeth's time thought very highly of its remedial effects. One of our herbalists, who describes it very accurately, and calls it the Cinquefoil, or five-leaved grass, desires his readers to give twenty grains of it either in white wine, or white-wine vinegar, "when," he says, "you shall very seldom miss the cure of an ague, be it what ague soever, in three fits, as I have proved to the admiration both of myself and others: let no man despise it because it is plain and easy; the ways of God are all such." It was commended as an especial herb to be used in fevers and inflammations, whether infectious or pestilential, and also for diseases of the lungs. The distilled water of the leaves and roots seems to have been a very favourite preparation, and the author adds: "If the hands be often washed therein, and it be suffered every time to dry in of itself, without wiping, it will in a short time help the palsy or shaking in them." Doubtless the plant mingled with wine might have been beneficial in agues, but one loses all one's reliance on these old prescriptions as we come to the conclusion of the matter. "Some hold," he says, "that one leaf cures a quotidian, three a tertian, and four a quartan ague, and a hundred to one if it be not Dioscorides, for he is full of whimsies. The truth is, I never stood much upon the number of the leaves, or whether I gave it in powder or decoction. If Jupiter were strong, and the moon applying to him, and his aspect good at the time of gathering, I never knew it miss the desired effects."

The form of the leaf gives its familiar name to the plant in many countries besides our own. Thus the French term it *Quintefeuille;* the Germans, *Fünffingerkraut;* the Dutch, *Vyfvingerkruid;* the Italians, *Cinquefoglio;* and the Spaniards, *Cinco en rama.*

6. **Spring Cinquefoil** (*P. vérna*).—Stem prostrate; lower leaves of from 5 to 7 inversely egg-shaped leaflets, serrated towards the end, bristly on the margin, and ribbed beneath; lower stipules narrow and acute. Plant perennial. This species bears small yellow flowers, two or three together, at the end of its weak prostrate branches, and is, as its name implies, the earliest flowering species, blossoming from April to June. The leaves are green on both surfaces. It is found occasionally on dry pastures, but is not a frequent plant.

7. **Orange Alpine Cinquefoil** (*P. alpestris*).—Root-leaves of 5 wedge-shaped leaflets, somewhat hairy, and deeply cut in the upper portion; stipules obtuse, upper ones egg-shaped, lower ones lanceolate; stem ascending. Plant perennial. This Mountain Cinquefoil, which grows in the North of England and Wales, and on some of the Scottish mountains, is somewhat larger than the Spring Cinquefoil, and is more upright in its mode of growth; but many botanists doubt if it is distinct from the last species. It is called *P. salisburgensis* by some botanists.

8. **Saw-leaved Hairy Cinquefoil** (*P. opáca*).—Root-leaves of 7 narrow wedge-shaped leaflets, deeply serrated; stem-leaves ternate, mostly opposite; stems ascending. Plant perennial. This plant, which has also been called *P. intermedia*, was described by Mr. Don as growing on the hills of Clova, the braes of Balquhidder, and the sea-shore opposite Dundee, but, like many other of his records for the same district, it was never confirmed.

9. **Common Tormentil** (*P. tormentilla*).—Stem procumbent or ascending; leaves ternate, sessile, or shortly stalked; lower leaves quinate on long stalks; leaflets lanceolate, deeply serrate, or inversely egg-shaped and wedge-shaped. Plant perennial. Two varieties of this plant are commonly found. In one, the leaves are all sessile, except those of the root, and the stem is ascending; in the second, the lower stem-leaves are stalked and blunt, and the stem prostrate and somewhat rooting. The Tormentil is a pretty little plant in the months of June, July, and August, when its yellow flowers are in great abundance among the short grass of moors and heaths. Its petals are usually four in number, but they are sometimes five; and in the variety which has a prostrate stem, it is so like the Creeping Cinquefoil that many believe the plants to be identical. In the common form of the Tormentil the stem is usually three or four inches high, and the flowers are of a very bright yellow. It is thought to be one of the most astringent plants of the genus, and it is still retained in the modern list of medicines. So astringent, indeed, are the root-stocks of this plant, that they are used in the Hebrides and Orkney Islands for tanning leather, and are even said to be superior to oak bark for that purpose, one pound being equal in strength to seven pounds of ordinary tan. In Lapland the roots are used for dyeing skins, harness, and gloves of a red colour; and in Killarney they are given as food to swine. The plant is very abundant in the Western Islands of Scotland, and the land was some years since so much injured by digging up these roots that the practice was prohibited. Sheep are very fond of the Tormentil. This plant and its varieties until recently were classed under a distinct genus, called *Tormentilla*, founded chiefly on the number of petals in the flower; but this is found to vary too much to afford a distinction.

** * * Leaves quinate or ternate. Flowers white.*

10. **White Cinquefoil** (*P. álba*).—Stem weak, ascending; root-leaves quinaté, upper ones ternate; leaflets oblong, with converging serratures, silky beneath. Plant perennial. This Cinquefoil is said by Hudson to have been found in Wales, but is otherwise unknown as a British flower, and its being so is doubted by our best botanists.

11. **Three-toothed Cinquefoil** (*P. tridentáta*).—Stem woody, creeping at the base; leaves ternate; leaflets oblong and wedge-shaped, 3-toothed at the extremity, smooth above, hairy beneath. This, which is a North American species, is a very doubtful native of Britain. Its only claim to be such rests on the authority of Don, who recorded it as growing on Werron Hill, and East rocks, Loch Brandy, Clova.

12. **Strawberry-leaved Cinquefoil** (*P. fragariástrum*). — Leaves ternate; leaflets roundish, inversely egg-shaped, serrated, silky on both sides; stems procumbent; petals as long as the calyx. Plant perennial. Have our readers ever set forth, as we have often done, to search under the hedges for a wild nosegay amid the chill gusts of early spring? How the winds raved among the branches, sweeping down the long flexible boughs of the willows, swaying those of the pensile birch to and fro, and bearing from the young oak many a brown leaf which had hung through the winter on its branches! How brightly the sunbeam of March was reflected by the glossy leaf of ivy or holly; while beneath their shelter the silver daisy boldly expanded, and a primrose-bud, half hidden among its wrinkled leaves, peeped forth; and the speedwell, or winter-weed, bore its tiny flowers of blue, or the golden dandelion or glossy celandine contrasted with the snowy wreath on the blackthorn. Hidden close among the bright green mosses some purple violet-bud was securely sheltered, and fungi of deep crimson, or pale yellow, or ivory whiteness, upreared their heads. The scarlet peziza, like a ruby cup, was seated on the withered bough; the cup-moss grew in grey clusters, and the peacock fungus, so like the rayed plumes of the bird after which it is called, seemed emerging from every crevice of the fallen tree. There, too, the white flowers of the Strawberry-leaved Cinquefoil lay in abundance on every sunny hedge, and all, save the botanist, would believe that these early blossoms belonged to the true Strawberry, and only needed the suns of summer to turn them into the glowing fruits. Both leaf and flower are almost exactly like those of the woodland Strawberry; the silvery hue of the young leaves, and even the strongly-marked veins of the more developed foliage, being also seen here. But the plant is, as our fathers called it, only the Barren Strawberry: and marked differences from the fruitful plant exist in the prostrate stems, the smaller flowers, and notched petals of the Cinquefoil. This plant is common throughout England on woods and banks, sometimes in mild seasons flowering even as early as January, very soon after the snow has melted from the bank. It continues in blossom till May. It was formerly placed in the genus *Fragaria* with the Strawberry.

6. Sibbaldia (*Sibbáldia*).

Procumbent Sibbaldia (*S. procúmbens*).—Leaves ternate; leaflets wedge-shaped, with 3 teeth at the end; flowers corymbose; stem procum-

bent. Plant perennial. This little plant is abundant on the Highland mountains, even at their very summits. It bears small yellowish flowers in June and July, and its leaves are slightly hairy, and pale green. It is very nearly allied to the *Potentillas*, but its general aspect is somewhat like that of the Lady's Mantle. The petals are often absent, and the number of pistils and stamens is very variable. Some authors class both this and the next species in the genus Potentilla.

7. Marsh Cinquefoil (*Cómarum*).

Purple Marsh Cinquefoil (*C. palústre*).—Stems ascending; leaves pinnate; leaflets from 5 to 7, lanceolate, deeply serrated; flower-stalks branched. Plant perennial. This plant is so nearly allied to the Cinquefoils, that it is by some writers called *Potentilla comarum*, but it differs from that genus by having an enlarged spongy receptacle. It is not unfrequent on bogs and marshes, bearing large flowers in July, of a dingy purplish colour. It is in some parts of England called Cowberry. It is the *Comaret* of the French, and the *Fünfblatt* of the Germans; while the Dutch call it *Rood waterberie*. Its name of Cowberry probably originated from a practice, common among the Irish, of rubbing the inside of milking-pails with this plant, in order that the milk may seem richer and thicker. Its roots are of sufficient astringency to be used in tanning, and they will dye wool of a yellow colour.

8. Strawberry (*Fragária*).

1. **Wood Strawberry** (*F. vésca*).—Calyx of the fruit spreading, or bent backwards; hairs on the general flower-stalk widely spreading, on the partial flower-stalks erect, or close pressed; petals slightly notched. Plant perennial. The pretty white flowers of the Strawberry plant stand up among the bright green hairy leaves from May to July. They are common in most woods and hedges, and the ripened fruit of June supplies a store for the country children, and is very wholesome and pleasant. It is, like many other berries, still more abundant in the woods of Northern Europe than in ours. In Sweden it is so plentiful that the tables are constantly supplied during the season with wood strawberries, and large baskets full are daily carried about the towns for sale. Linnæus, who considered it the most wholesome of all fruits, and who believed that eating strawberries had cured him of a fit of the gout, used to desire his servant to purchase all that were brought to the door, and daily ate large numbers of them. Hoffman has also recorded the cure of some dangerous disorders by eating strawberries; and Boerhaave accounted this fruit as one of the principal remedies in putrid fevers. There is no doubt that it is an excellent dietetic fruit for persons liable to inflammatory or bilious disorders. From the pleasant odour of the strawberry we not only derive our botanic name, made from the word *fragrans*, but the French have also their word *fraise;* and one of the common comparisons in use in France is not merely as with us, "fresh as a rose," but also "*fraiche comme une fraise.*" The Germans call the plant *Erdbeere*, and the Italians *Tragolo*. The English name of Strawberry is said by some writers to have been derived from an old practice, which has again in late years much prevailed

1. PROCUMBENT SIBBALDIA
   Sibbaldia procumbens
2. MARSH CINQUE FOIL
   Comarum palustre
3. STONE BRAMBLE
   Rubus saxatilis
4. ARCTIC RASPBERRY
   Rubus arcticus
5. MOUNTAIN RASPBERRY
   R. chamæmorus
6. WOOD STRAWBERRY
   Fragaria vesca
7. HAUTBOY STRAWBERRY
   F elatior

Pl. 70.

in gardens, that of placing straw among the ripening fruits to prevent their being soiled. Another more probable derivation has been from the practice, still so frequent among country people, of threading the strawberries on the slender stem of a grass. That this was done some centuries since, we know from a passage in Browne's "Pastorals":—

> "The wood-nymphs oftentimes would busy be,
> And pluck for him the blushing strawberry;
> Making of them a bracelet on a bent,
> Which for a favour to this swain they sent."

As Professor Burnett, however, remarks, the word is more likely to be a corruption of stray-berry, from the trailing or wandering of its runners, which stray to great distances from the parent plant, and establish colonies all around. John Lydgate, who died in 1483, writes the word *straberry*, in his poem called "London Lyckpenny;" but the orthography of words in those days was too uncertain to afford much ground for ascertaining exactly their origin, and the poet would have been likely enough, had he been writing the word a year after, to spell it in some other way.

The Strawberry is much cultivated both in our own country and also on the Continent. In the Isle of Jersey the plants are covered over during cold weather with layers of seaweed, a plan which is said to increase the size and goodness of the fruit. Several species have been introduced into this kingdom, and our woodland fruit affords, under culture, several varieties of white and red strawberries. Mr. T. Hudson Turner, in a paper on the state of Horticulture in England some centuries since, says, "Strawberries and raspberries rarely occur in early accounts, owing probably to the fact that they were not cultivated in gardens, and known only as wild fruits. Strawberries are named once in the Household Roll of the Countess of Leicester for the year 1265. The plant does not seem to have been much grown even at the end of the sixteenth century. Lawson speaks of the roots of trees being 'powdred' with strawberries, red, white, and green. Raspberries, barberries, and currants, he describes as grown in borders. Both fruits, being indigenous, were probably to be found plentifully in the woods of ancient times, and thence brought to market, as they are in the present day in Italy and the other parts of Europe."

We find one of Ben Jonson's personages saying—

> "My son has sent you
> A pot of strawberries gather'd in the wood
> To mingle with your cream."

And we know that in the time of Henry VIII. strawberries were sold at fourpence a bushel. Tusser, who wrote in the latter part of this reign, says, in his advice to the farmer—

> "Wife, into the garden and set me a plot
> With Strawberry-roots of the best to be got;
> Such growing abroad among thorns in the wood,
> Well chosen and pricked, prove excellent good."

In earlier times than these, however, they were occasionally cultivated in gardens. Hollinshed, who furnished Shakespeare with many materials for

his poems, describes a scene which the great bard afterwards dramatized. Ely Place, Holborn, was the ancient site of the stately palace, then the London residence of the Bishops of Ely, and there the grass waved green over meadows, and the vine trailed over walls, and Strawberries grew in garden borders. The old historian, referring to the conduct of Richard III. when Duke of Gloucester, on the morning of the execution of Lord Hastings, in 1483, has this graphic passage:—"On the Fridaie (being the 13th of June) manie lords assembled in the Tower, and there sate in councell, devising the honourable solemnitie of the King's coronation, of which the time appointed then so neere approached, that the pageants and subtilties were in making day and night at Westminster, and much vittels killed that afterwards was cast awaie. These lords sitting together, communing of this matter, the Protector came in among them, first about nine of the clocke, saluting them courteouslie, and excusing himselfe that he had beene from them so long, saieing merrilie that he had beene a sleepe; that daie, after a little talking with them, he said unto the Bishop of Ely, 'My lord, you have verie good strawberries in your garden in Holborne, I require you let us have a messe of them.' 'Gladly, my lord,' quoth he; 'would God I had some better thing as ready to your pleasure as that!' And therewithall in all hast he sent his servant for a mess of strawberries." Notwithstanding this, however, Morton, the then bishop, was, with others, taken prisoner, as suspected of being opposed to the plans then forming.

The Strawberry, frequent as it is now, is still prized both in its wild and cultivated state; many could say with Hurdis—

> "We often wander at the close of day
> Along the shady lane or through the woods,
> To pluck the ruddy strawberry, or smell
> The perfumed breeze that all the fragrance steals
> Of honeysuckle, blossom'd beans, or clover;
> Or haply rifles from the new-made rick
> The hay's sweet odour, or the sweeter breath
> Of farmer's yard, where the still patient cow
> Stands o'er the plenteous milk-pail, ruminant."

In the coffee-houses at Paris, a very pleasant beverage, called *bavaroise à la Grecque*, is made of the strawberry.

2. **Hautboy Strawberry** (*F. elátior*).—Calyx of the fruit spreading, or turned backwards; hairs of the general and partial flower-stalks spreading. Plant perennial. This species is usually admitted into the list of British plants, but it is not indigenous. It is, however, found, though rarely, in copses and hedges of the South of England, whence it has escaped from gardens. It has more hairy foliage than the Wood Strawberry, and is a larger plant. The white flowers expand from June to August, and it is remarkable for bearing, in some cases, blossoms which, having stamens only, produce no fruit. This is the case with the plant also in the garden; and Strawberry cultivators are therefore careful to exclude the plants with barren flowers. This species grows on the high woods of Bohemia; hence its name of Hautboy, which is a corruption of Hautbois.

Some of the alpine fruits have, like the Pine Strawberry (*F. collina*), a sweeter flavour than any others, except the different Hautboys. Numerous

varieties of the garden Strawberries are also obtained from the American species (*F. virginica*), and from the *F. grandiflora* of Surinam; and the Bishop's Strawberry, the American Scarlet Strawberry, the Garnstone's Scarlet, the Hudson's Bay, Melon, and Roseberry Strawberries, are all well-known varieties of the American species, while the Black Prince, Bullock's Blood, and others, are varieties of *F. grandiflora*. The black and blush Chili Strawberries are derived from *F. chiloensis*, a South American species, which produces some of our largest and richest fruits. Many writers believe that all the species from which they are said to be derived are one and the same in reality, assuming different forms and qualities under different circumstances of soil and situation.

The chief supply of strawberries for the London markets was formerly derived from Twickenham and Isleworth; and, as a writer on this fruit has observed, one of the most remarkable instances of the power of the human body to endure great and continued fatigue was shown by the strawberry women, who, during the season, would carry a heavy basket twice daily from Twickenham to Covent Garden, walking upwards of forty miles. Fatigue like this would soon destroy a horse; but these Cambro-Britons, who came purposely from the Welsh collieries, endured the labour for weeks without injury or complaint.

St. Pierre's observations on the number of insects which are nourished by a Strawberry-plant are very interesting. He had placed one of these plants near his window, and was amused by observing that in the course of three weeks no less than thirty-seven species visited the Strawberry; and at length they came in such numbers and variety, that he desisted from attempting to count or describe them. They were, he says, distinguished from each other by their forms, colours, and manners. That little plant, which is so pleasant and so refreshing to man, was not framed for him alone.

This naturalist then, by means of a lens, examined the leaves of the plants, which, he says, he found divided into compartments, covered with hair, separated by canals, and interspersed with glands. These compartments appeared like large verdant carpets, and their hairs seemed to resemble vegetation of a particular order; some of them were straight, others inclined, others forked, and hollow like tubes, from the extremities of which issued drops of liquid; and their canals, as well as their glands, seemed to be full of a sparkling fluid.

9. Bramble, Raspberry (*Rubus*).

* *Leaves pinnate or ternate. Stem nearly erect, biennial, woody.*

1. **Common Raspberry** (*R. idæus*).—Stems round; prickles straight; leaves pinnate, with 5 or 3 serrated leaflets, white with down on their under surface; foot-stalks channelled; flowers axillary and terminal, corymbose and drooping; petals as short as the calyx; fruit downy. Plant perennial. The Raspberry-bush, though a familiar object in the garden, is not a frequent plant in the woods and hedges of England, though in the north of this kingdom it is not of very rare occurrence in rocky woods, and it grows also in several southern counties among trees and bushes. A writer, describing

the plants about Lexden, in the neighbourhood of Colchester, says, "The boggy ground in which the springs have their rise is covered with low alders, and produces much that is interesting to the botanist. *Rubus idæus* abounds in it, and when the fruit is ripe presents a temptation to venture on the soft and treacherous soil." In North Wales it is frequent, and in the neighbourhood of Bettws-y-coed it is almost as plentiful as the blackberry. The greenish white flowers of the plant appear in May and June; its fruits are smaller than those of the cultivated Raspberry, of which it is the origin, and are either red or yellow. They are very wholesome, and not likely by becoming acid to disagree with delicate persons, while they are considered very salutary in some complaints. The uses of the Raspberry, however, in desserts, in confectionery, in making a pleasant summer beverage when mingled with vinegar, in giving their peculiar flavour to brandy and other liquors, are too well known to require much comment. The Raspberry is a native of most of the countries of Europe, and has its name from Mount Ida, in Crete. It is the *Framboisier* of the French, the *Himbeerstrauch* of the Germans, the *Braamboos* of the Dutch, the *Rovo ideo* of the Italians, the *Zarza idea* of the Spaniard, and *Malinik* of the Russians. Our forefathers called the fruit *Raspis*, or Hindberry. Dr. E. D. Clarke says that the manner in which the Raspberry is found in Sweden might afford useful hints as to the mode which should be adopted in its cultivation. Of all places it seems to thrive best among wood-ashes and cinders, as among the ruins of houses which have been destroyed by fire. This traveller also found it most luxuriant in those forests where the Swedes had kindled fires in the wood, and left the land strewed with the ashes of the trees. "In the North of Sweden," this writer says, "neither apples, pears nor plums can be produced by cultivation, but Nature has been bountiful in a profusion of wild and delicious dainties. No less than six species of Raspberry, besides white, red, and black currants, grow wild in all the forests." He found our common Raspberry abundant in a wild state, and producing highly-flavoured fruit. Wild gooseberry-trees were less common, and four species of whortleberry were decked with plenty of red or black berries, while the soil was covered with this low shrub to a great extent, and the mouths of the children were constantly blackened by eating the fruits. "All round the Gulf of Bothnia," says this writer, "the traveller at this season of the year will see old women and children waiting near the public roads in hopes of meeting passengers to whom they may offer their large baskets filled with raspberries, whortleberries; the baskets are made of birch-tree bark." The child followed the carriage continually, and when they received a few pen payment for their fruits, would endeavour to induce the travellers to g more, and expressed their gratitude by bowing to the ground. Dr. ke had tarts made of the berries thus purchased; but he adds, that the s es, at that time, never made this use of them, probably owing to the sc of sugar.

In Canada the people commonly take their baskets and go o' erry-ing" in the woods during the Raspberry season. Mrs. Moodie describes some of the shores of Stony Lake as abounding in these fruits, the banks being formed of large masses of limestone; on which the rich cardinal flower

and brilliant tiger-lily displayed their magnificence, while beautiful water lilies abounded in the clear waters.

* * *Leaflets* 5; *digitate, or cut into lobes, or ternate, rarely pinnate; stem mostly biennial, woody.*

2. (1) **Common Bramble** (*R. fruticósus*).—Stem arched, rooting at the tip, angular, furrowed, and nearly smooth; prickles slender, uniform, confined to the angles of the stem, and not intermingled with bristles; leaflets quinate, with close white down underneath. The beautiful snowy or delicate pink flowers of this Bramble are to be found on most hedges from June till the end of summer, often contrasting with the dark crimson or black berry clustering on the same bough. When winter comes, the long trailing shoots are yet clad with leaves, exhibiting the tinge of purple and deep brown, or of that red colour, which combined with the fruit to give the name of *Rubus* to the genus, with here and there a leaf green as the spring foliage, and whitened beneath with down. We have all in childhood eaten the ripened fruits, for what so "plentiful as blackberries"? They are very wholesome, and often so juicy as to deserve the French provincial name applied to one of the species, *Pinte de vin.* The ancients considered both fruit and flowers efficacious against the bite of the serpent, but blackberries are now little valued save by country children, though they are occasionally made into puddings and tarts, or boiled with sugar, when they form a wholesome and pleasant preserve. Blackberries were also formerly considered as of valuable medicinal uses, especially in complaints of the throat and mouth, and Bramble-roots boiled in wine were prescribed by the Roman physicians as one of the best astringents. The old English herbalists, who received many of their notions of the uses of plants from the old Roman writers, considered every part of the Bramble as affording medicines, which, variously prepared, relieved various forms of human suffering. Turner, one of our oldest writers on plants, says, "The Bramble bindeth, drieth, and dieth heyre," and a general belief prevailed that the Bramble was so astringent, that even eating its young shoots as a salad would fasten teeth which were loose. Many a poet, like Cowper and Robert Nicholls, has referred to the pleasure of gathering the blackberries in early days, and Elliott has a beautiful little poem addressed to the plant:—

"Thy fruit full well the school-boy knows,
Wild Bramble of the brake,
So put thou forth thy small white rose,
I love it for his sake:
Though woodbines flaunt, and roses blow
O'er all the fragrant bowers,
Thou need'st not be ashamed to show
Thy satin-threaded flowers;
For dull the eye—the heart as dull,
That cannot feel how fair,
Amid all beauty beautiful,
Thy tender blossoms are."

Brambles in some cases prove injurious to hedges by climbing about more valuable plants, and hindering their growth; but, on the other hand, they protect more delicate shrubs and herbs, and shield them from rough winds.

The shoots are very tough, and are used for binding down the cottage thatch, and the sods of the lowly graves. Badgers are said to be very fond of blackberries, and to thrive well upon them. The green boughs are of great use in dyeing wool, silk, and mohair, black; and silkworms seem to like the leaves of this plant as well as those of the mulberry, and to thrive as well upon them. A small fungus, the Bramble Puccinia (*Puccinia rubi*) often forms sooty patches in autumn on their under surfaces. A double flowering variety of the Bramble is very ornamental to the garden and shrubbery.

Few families of plants have been more variously arranged than the Brambles, most botanists recording a large number of species, while others consider that these so-called species are but different forms of the same plants, varying only according to circumstances. Mr. Babington, in his "Manual of Botany," describes forty-three species of *Rubus*. Dr. Bell Salter considers that there are twenty-three species, and many botanists divide them into a larger number than either of these writers. In that valuable work, "The British Flora," by Sir William Jackson Hooker and Dr. Arnott, the following remark occurs on this subject: "We are almost quite convinced, practically, not only because the characters taken from the young shoots, and disappearing when they are older and begin to blossom, are not permanent, but because none of the reputed species of the shrubby Brambles are either anatomically or physiologically distinct, all passing into each other without any fixed assignable limit; and theoretically, from a consideration of what is requisite to constitute a difference between the other European species of *Rubus*, that all of the present section are mere varieties, approaching on the one side to *R. idæus*, on the other to *R. saxatilis*, with both of which many fertile and permanent hybrids may have been formed and are still forming." These authors have, therefore, given what they consider the more prominent forms or races, numbering them as if only constituting a single species, and have indicated how these ought probably to be reduced to four types, an arrangement which is followed in this work.

In examining the descriptions it will be necessary to remember that by stem is meant the barren root-shoot, and the prickles and leaves, when not otherwise described, must be understood as those upon that shoot.

2. (2) **Upright Bramble** (*R. suberéctus*).—Stem roundish, nearly erect, not rooting, nearly smooth; prickles few, small, chiefly confined to the angles, and not intermixed with bristles; leaflets quinate, or sometimes pinnate, without close white down underneath. This plant, which is common in boggy woods and hedges, bears its white rose-like flowers from June to August, and produces its red or black fruits in autumn till the frosts destroy them.

2. (3) **Buckthorn-leaved Bramble** (*R. rhamnifolius*).—"Stem arched, rooting, nearly glabrous; prickles confined to the angles of the stem, uniform, without glandular bristles; leaflets quinate, paler underneath, but not with close white down." This plant, which is in flower at the same season as the Bramble last described, differs very little from it. It is found in thickets, woods, and hedges, and gives its glossy black fruits in autumn to child and bird.

2. (4) **Hornbeam-leaved Bramble** (*R. carpinifolius*).—"Stem arched

1. COMMON RASPBERRY.
Rubus idæus.

2. COMMON BRAMBLE.
R. fruticosus.

3. DEWBERRY.
R. caesius.

Pl. 71.

or prostrate, rooting, hairy; prickles confined to the angles of the stem, uniform, without glandular bristles; leaflets quinate or ternate, without close white down underneath." This plant grows in woods and thickets, flowering in July and August. The authors of the "British Flora" remark, "This and the last appear to be merely the two extremes of the same form, between which there are, it is to be feared, many intermediate states."

2. (5) **Hard-leaved Bramble** (*R. corylifólius*).—"Stem arched, rooting, nearly smooth; prickles scattered, nearly equal, without glandular hairs or bristles; leaves quinate or ternate, without close down underneath." This plant, which grows in hedges and thickets, flowering in July and August, is scarcely distinct from the two preceding.

2. (6) **Glandular Bramble** (*R. glandulósus*).—"Stem arched, or decumbent, rooting, hairy, not glaucous; prickles scattered, unequal, with numerous glandular hairs and slender prickles; leaflets quinate or ternate, without close white down underneath; calyx erect, spreading, or turned backwards in fruit." This species, which is found in woods, thickets, and hedges, is in flower during July and August.

2. (7) **Dewberry** (*R. cæsius*).—"Stem prostrate or arched, rooting, more or less glaucous; prickles scattered, unequal, with (sometimes very few) glandular hairs; leaflets ternate or quinate, without close white down underneath; calyx closely clasping the fruit." This low-growing Bramble is not uncommon, trailing over our field borders or heaths, in thickets, or on hedge-banks. The fruits are few and large, less compact but more juicy than the Blackberry, and half inclosed in the calyx. When quite ripe they are black, but are often so thickly covered with a pale blue powdery bloom as to have a grayish tint. They grow either singly or two or three together, and not in dense clusters like the blackberry. Clare, a poet, whose descriptions of nature are unsurpassed for truthfulness, describes the "sun-burnt ców-boys" as searching for them where they are often to be found—beside the brook:—

> "The pithy bunch of unripe nuts to seek,
> And crabs sun-redden'd with a tempting cheek,
> From pasture hedges, daily puts to rack
> His tatter'd clothes, that scarcely screen the back,—
> Daub'd all about as if besmear'd with blood,
> Stain'd with the berries of the brambly wood,
> That stud the straggling briars as black as jet,
> Which when his cattle lair he runs to get;
> Or smaller kinds, as if begloss'd with dew,
> Shining, dim powder'd, with a downy blue,
> That on weak tendrils lowly creeping grow,
> Where, choked in flags and sedges, wandering slow
> The brook purls simmering its declining tide,
> Down the crook'd boundings of the pasture side;
> There they to hunt the luscious fruits delight,
> And dabbling keep within their charge's sight,
> Oft catching prickly struttles on their rout,
> And miller-thumbs, and gudgeons, driving out,
> Hid near the arched brig, under many a stone
> That from its wall rude passing clowns have thrown."

Even in Australia, where fruits are so few and so tasteless, the bramble fruit has a somewhat pleasant flavour, though rather acid, and more

resembling that of the cranberry. It is prized by the colonists, and used for tarts. The Tasmanian Bramble is the *Rubus gunianus* of the botanist. It is a small species, having yellow flowers, and is found commonly at the summits of all the mountains, as well as in many level parts of that country. "Its mode of growth," says Backhouse, "is something like that of our dewberry, and it is a creeping plant, seldom exceeding a few inches in height, but covering patches of ground several feet in extent, and flourishing on a soil chiefly composed of decayed wood. The fruit is of a fine colour, and formed like that of the Arctic bramble. It is concealed by the leaves, which densely cover the ground, and is also partially hid under the light soil.'

* * * *Leaflets ternate, stem herbaceous, or nearly so.*

3. **Stone Bramble** (*R. saxátilis*). — Stems slender, rooting, nearly without prickles or bristles; flower-shoots erect, with a panicle of few flowers; leaflets ternate, slightly downy. This Bramble is found chiefly in the north and west of this kingdom, where it grows on stony mountainous places. Its leaflets are egg-shaped, and are sometimes only two in number. The flowers are minute, appearing from June to August, and are of a greenish yellow colour. The fruits are large, bright red, and few in number.

4. **Arctic Bramble**, or **Strawberry-leaved Bramble** (*R. árcticus*). —Stems erect, not rooting, without prickles or bristles; petals roundish, notched; flower terminal and mostly solitary; leaflets ternate, slightly downy, and bluntly serrated. This Bramble is well known in the North of Europe, and its fruit is highly prized. It is recorded as growing many years ago in the Isle of Mull, and on Ben-y-Gloe, in Athole. Sir William Hooker and Dr. Arnott remark of this species:—"The only place in Scotland which agrees with the foreign localities of this plant, is in the low moors near the station of *Menziesia cærulea*, where stood the old Caledonian forest; there only need it be looked for, the two spots above given we have searched in vain for it." Many botanists have searched for it since, but all have failed to find it.

The Arctic Bramble is found on mountainous turfy bogs; its stems are from four to six inches in height, and its flowers large and rose-coloured, expanding in June. The flavour of the fruit is delicious, partaking both of that of the raspberry and strawberry. In Sweden a very rich wine is made of these berries. "The nobility in Norlandia," says Linnæus, "cause to be made of the berries syrup, jelly, and bramble wine, which are partly consumed by themselves, and partly sent to their friends at Stockholm, as the most choice and delicious dainties;" and, indeed, among all the wild berries of Sweden, these seem to hold the first place. Linnæus, in his "Flora Lapponica," records his obligations to this fruit. "I should be ungrateful," he says, "to this excellent plant, which has so often refreshed me with the nectareous juice of its berries when almost overcome with hunger and fatigue, were I not to give a full description of it." All travellers in the North of Europe speak highly of the worth of this fruit, and of the somewhat less delicious Cloudberry. The berries of the Arctic Bramble are not only highly flavoured, but so fragrant, that if only a few be gathered and placed in a

saucer and brought into the house, they perfume the whole room. They are of a dark red colour, and about the size of the common raspberry, but the plant itself is so diminutive that an entire shrub, with all its branches, leaves, and fruit, was placed by Dr. E. D. Clarke within a phial, holding about six ounces of alcohol, in which state it was preserved with even its colours unaltered, and might be so, this traveller remarks, for any length of time, provided it be kept from the access of external air.

* * * * *Leaves simple.*

5. **Mountain Raspberry,** or **Cloudberry** (*R. chamæmórus*).—Stem herbaceous, without prickles, 1-flowered; leaves lobed and plaited. This is a very distinctly marked species of Bramble, growing in the mountainous parts of England, Wales, Scotland, and Ireland. It has in June beautiful large white flowers, often delicately tinted with rose colour, having their stamens and pistils on separate plants. The stems are about half a foot high, creeping like the stems of the raspberry and Arctic species.

The delicious fruits of this Bramble are prized in all countries in which they grow, and, though rare in this kingdom, are plentiful in the North of Europe. The bogs near the water in some parts of Lapland are covered with Cloudberries, and Dr. Clarke relates that from a spot thus situated, he and his Swedish interpreter gathered, in little more than an hour and a half, a large basketful of the fruit. "In its natural state," says this writer, "no fruit looks more beautiful. We endeavoured to procure a small cask of it to send to England, but wanting a sufficient quantity of sugar, the acetous fermentation took place, and the whole mass was spoiled. Wherever we walked near the river we found whole acres covered with its blushing fruits, hanging so thick that we could not help treading on them. As they ripen they lose their crimson hue, and turn yellow, when the flavour of the fruit is not so refreshing to the palate. They are always most delicious when they have been cooked. In their unripe state they resemble in taste those diminutive stunted apples gathered from Codlin-trees, which are called 'crumplings.' The larger berries are as big as the top of a man's thumb." Our traveller, who, while staying at the house of a Lapland minister, was seized with a fever, remarks, that in the evening two of the children came into the room, bringing with them two or three gallons of Cloudberries, which grew so abundantly near the house that it would have been easy to gather bushels of the fruit. "Little," says this traveller, "did the author dream of the blessed effects which he was to experience by tasting of the offering brought by these little children, who, proud of having their gifts accepted, would gladly run and gather daily a fresh supply, which was as often blended with cream and sugar by the hands of their mother, until at last he perceived that his fever rapidly abated, and his spirits and appetite were restored; and when sinking under a disorder so obstinate that it seemed to be incurable, the blessings of health were restored to him when he had reason to believe he should have found his grave. The symptoms of amendment were almost instantaneous after eating these berries." The Laps make a jelly of Cloudberries by boiling them with fish, and the Swedes preserve them with sugar in various ways. In the northern parts of the

Gulf of Bothnia, especially about Tornea, the fruits are commonly collected and sent in the form of a conserve to Stockholm, where they are used as a sauce for meat, and mingled with soup. Casks are also sent to that city filled with the roots of this Bramble, from which vinegar is made.

There is great diversity of opinion among authors respecting the number of native species of Brambles. Sir Joseph D. Hooker, for example, recognises only four species, viz., Raspberry, Stone Bramble, Cloudberry, and Blackberry, ranging the other forms enumerated as species above as subspecies or varieties of the Blackberry (*R. fruticosus*).

10. AGRIMONY (*Agrimónia*).

Common Agrimony (*A. eupatória*).—Leaves pinnate; smaller leaflets alternating with the larger ones, strongly serrated, downy underneath, and the terminal ones stalked; spikes long, with distant flowers. Plant perennial. During the months of June and July this pretty wayside flower can hardly fail to arrest our attention by its tapering spikes of yellow blossoms, which have a faint odour of lemon, or as some say of apricots, an odour becoming more powerful if they are bruised. Gerarde, and the herbalists of his day, praise the great virtues of the Agrimony. Michael Drayton mentions it in his "Muses' Elysium" among several other supposed herbs of virtue :—

> "Next these here Egremony is,
> That helps the serpent's biting;
> The blessed Betony by this,
> Whose cures deserving writing,
> This All-heal, and so named of right
> New wounds so quickly healing;
> A thousand more I could recite
> Most worthy of revealing."

Few plants are, in our days, in more repute as a tonic than the Agrimony. The village doctors and doctresses yet prescribe it, and the author has known it to be taken in cases of debility with apparent benefit, for the herb is doubtless somewhat tonic in its properties, though less so than that common medicinal plant, the Red Centaury. The Agrimony is an ingredient in most of the herb teas which have from time to time been recommended to public notice. A decoction of the plant is also commonly used as a gargle for diseased throats, and the notion that it was good for a disordered liver once gave it the familiar name of Liverwort. Coughs, agues, gout, and a variety of ills, were thought by the old herbalists to be ameliorated by syrup and salves made of the Agrimony; and the native of any other country who should read their pages, while he wondered at the prevalence of serpents in the land, might at least congratulate the physicians of the age that herbs to cure their "biting" were to be found in every wood. Doubtless, in times when forests were more frequent than now, the rambler or the woodman might be more often bitten by the viper or adder, the only native reptile whose bite is poisonous; but as the innocent snakes and slow-worms are popularly believed also to have the power of inflicting deadly wounds, the apparent cures wrought by these herbs would be numerous.

The Agrimony contains tannin, and has been used in dressing leather;

1 AGRIMONY
Agrimonia eupatoria
2 LADY'S MANTLE
Alchemilla vulgaris
3 ALPINE L.M.
A alpina
4 FIELD L.M.
A arvensis
5 GREAT BURNET
Sanguisorba officinalis
6 SALAD BURNET
Poterium sanguisorba

Pl. 72.

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it also dyes wool of a yellow colour. It is *L'Aigremoine* of the French, and *Der Odermennig* of the Germans, while the Dutch call it *Agrimonie*. The root in spring is sweet scented.

11. Lady's Mantle (*Alchemilla*).

1. **Common Lady's Mantle** (*A. vulgaris*).—Leaves kidney-shaped, plaited, with from 7 to 9 lobes, blunt, serrated; flowers in loose divided clusters. Plants perennial. This herb is more attractive by the beauty of its foliage than by the small but pretty flowers, which from June to August deck it with yellowish green petals. Purton in his "Midland Flora" remarks, "I agree with Dr. Abbot, the author of the 'Bedford Flora,' that this is one of the most elegant of the native plants," and though more showy and brilliant flowers are to be seen, yet most people would agree with this opinion. The stem is about a foot high, and the foliage, which is very large for the size of the blossom, is in one form, rendered of a grey green by the quantity of soft silky hair upon it. The plant is not uncommon on moist hilly pastures in the north of this kingdom, growing in similar places throughout nearly the whole of Europe. It bears in Sweden, as in our country, a name which refers to the Virgin Mary, for it is there called *Maria Kapa*. The French term the plant *L'Alchemille*, the Germans *Der Sinau*, the Dutch *Leuwenvoet*. In the upland pastures, where it abounds, it is eaten readily by sheep as well as by some other animals. Some writers say that the plant is not relished by cows, but Haller, in his "Iter Helveticum," remarks, that the extraordinary richness of the milk in the dairies of the Alps is attributed altogether to these animals having fed upon this plant and the Ribwort Plantain. In Gothland a tincture is made of its leaves for spasmodic or convulsive diseases. In an epidemic complaint of this kind in 1754, a medicine made from this Lady's Mantle was considered very efficacious, and it had long been in repute as a remedy in milder forms of disease, and was also, though with little reason, praised as an outward application to wounds. Several species of the *Alchemilla* are esteemed as tonics, but, as Professor Burnett observes, they have been prized above their deserts. The Arabian physicians have a very high opinion of the remedial virtues of this common species, and Hoffman and others have affirmed that it has the power of restoring beauty and freshness to the faded complexion. It is called *Alkemelyeh* by the Arabs, and was formerly prized by the alchemists as an ingredient in their preparations.

2. **Alpine Lady's Mantle** (*A. alpina*).—Root-leaves digitate, with from 5 to 7 divisions, which are blunt and closely serrated at the ends, and white and satiny beneath. Plant perennial. Two varieties occur of this pretty plant, which are by some writers described as species. In the first the leaflets are quite distinct to the base, and in the second the leaflets are joined together to nearly a third of their length. The former is sometimes called *A. argentea*, the latter *A. conjuncta*. The name of *argentea* would not be inapplicable to any form of the species, for never was leaf more silvery than this, nor have we any native plant the foliage of which is more beautiful. Like many other leaves rendered white by silky down, they long preserve their beauty even in the herbarium. So glossy is the foliage, that the under

surface is like satin, and is so lustrous as to have quite a metallic appearance. This alpine species grows high up on the mountains at the north of England and Scotland, and is very frequent in the Highlands, as well as on the heights of Ireland. It is supposed by Lightfoot to aid considerably in giving the peculiarly excellent flavour to the highland mutton.

3. **Field Lady's Mantle** or **Parsley Piert** (*A. arvénsis*).—Leaves palmate, 3-cleft; lobes wedge-shaped, deeply toothed at the end; stem prostrate or ascending; flowers sessile, axillary. Plant annual. This is a common little plant everywhere in fields and waste places, often growing on the wall beside Whitlow-grass, but not flowering until May, when that blossom has withered. It continues in bloom till August. The branches and leafy stems often spread over the soil, and are five or six inches long. The small tufts of greenish flowers are almost hidden among the leaves and their large stipules.

12. Burnet (*Sanguisórba*).

Great Burnet (*S. officinális*).—Leaves pinnate, with about 13 leaflets, which are oblong and heart-shaped, stalked, blunt, and coarsely serrated; spikes egg-shaped, or in one variety of the plant long and cylindrical. Plant perennial. This Burnet has from June to September large oblong heads of flowers, of a dull purple colour, standing on a much-branched stem, from one to three feet high. Cattle are very fond of this plant, which is not uncommon in moist pastures. It had the old name of Bloodwort, not so much from its colour probably as from its supposed virtues as a styptic. The people of Siberia are said to eat the roots.

13. Salad Burnet (*Potérium*).

Salad Burnet or **Burnet Bloodwort** (*P. sanguisórba*).—Stem slightly angular, lower part often downy; leaves pinnate, with numerous small serrated leaflets, which are smooth or slightly hairy beneath; calyx of the fruit smooth, and marked with a network; flowers in roundish heads, the upper ones in each head bearing crimson-tufted pistils; the lower ones from 30 to 40 stamens. Plant perennial. This plant as early as June has its pistil-bearing blossoms open, the purplish crimson styles with their stigmas looking like little richly-tinted brushes long before the flowers bearing stamens expand. These latter are fully blown a week or two later, and the plant is then in flower till the end of July. The lower flowers, which contain the stamens, present a very elegant appearance, as their long filaments hang all around the oval head. The stem is about a foot and a half in height, often much tinged with red, while the leaf-sprays which crowd around its base are bright green and of an elegant form. To these leaves the plant owes its name of Salad Burnet, for their flavour, so like that of the cucumber, induced our forefathers to eat them in their salad, and they are still gathered for this purpose on the Continent. In France the plant is called *La Pimprenelle*, and the Germans call it *Die Pimpernelle*. Both this and the Great Burnet were formerly planted as pasturage for cattle, and the "Sweet Burnet" is praised by the poets of Queen Elizabeth's time. It has of late years been again cultivated to some extent by farmers as food for cattle, as

its very luxuriant growth in the early spring affords a good quantity of herbage, and it may be mowed thrice during the summer; but it was not found to succeed, and it was then said that cattle were not fond of it. Mr. Purton, in his "Flora of the Midland Counties," remarks on this subject, that on Salisbury Plain, between that place and Everley, this plant forms almost the whole staple of herbage over a great extent of that most excellent sheep-walk; and the failure in other places may, he thinks, be owing to the cultivators having selected a wrong soil for its growth, as the plant never grows naturally on any other than chalky ground. Valuable as it is for sheep, it is probable, however, that horned cattle do not like it.

This species of Burnet seems to be that which has acquired so much celebrity as the toper's plant, for it was customary to infuse it in various liquors, and with the Borage and some other flowers it helped to compose that celebrated beverage, called a cool tankard. The old herbalist, who called it *Pimpinella* and *Bipula solbegrella*, prized it very highly. "It is," says Culpepper, "an herb the sun challengeth dominion over, and is a most precious herb, little inferior to betony; the continual use of it preserves the body in health, and the spirits in vigour, for if the sun be the preserver of life, under God, then his herbs are the best in the world to do it." He adds, "It is a friend to the heart and liver. Two or three of the stalks put into a cask of wine, especially claret, are known to quicken the spirits, refresh and clear the heart, and drive away melancholy. It is a special help to defend the head from noisome vapours, and from infection of the pestilence."

The author of the "Journal of a Naturalist" remarks, "The common Burnet of our pastures in a remarkable degree possesses the faculty of preserving its verdure, and flourishing amid surrounding aridity and exhaustion. It is probable that these plants and some others have the power of imbibing that insensible moisture which arises from the earth even in the driest weather, or from the air which passes over them. The immense evaporation proceeding from the earth even in the hottest season supplies the air constantly with moisture, and as every square foot of this element can sustain eleven grains of water, an abundant provision is made for every demand."

14. Rose, Dog Rose, Sweet Briar (*Rosa*).

* *Prickles slightly curved, and intermixed with bristles. Bracts large.*

1. **Dickson's Rose** (*R. dicksóni*).—Shoots bristly; prickles scattered, slender, awl-shaped; leaflets oval, twice serrated, hoary; sepals long, simple, equal; fruit egg-shaped, somewhat cup-shaped. Plant perennial. This Rose was recorded from Ireland by Mr. J. Drummond, but though usually enumerated among our British species, its discovery has never been confirmed.

2. **Cinnamon Rose** (*R. cinnamómea*).—Shoots bristly; prickles few, slender, awl-shaped; leaflets lanceolate, somewhat oblong, serrated, downy, and glandular beneath. Plant perennial. This Rose has been found in a wood in Yorkshire, but in all probability as an escape from a garden.

* * *Prickles slightly curved; bracts small, or none.*

3. **Burnet-leaved Rose** (*R. spinosíssima*).—Prickles very numerous and crowded, mostly straight, of various sizes, and intermixed with bristles;

leaflets serrated, their disk without glands; calyx simple; fruit nearly globular, erect. This, though not one of the prettiest, ranks certainly among the most fragrant of our wild Roses, but it is by no means generally diffused. It is a thick bush, from two to four feet in height; its dark purplish brown stems and branches being so prickly, that it is a difficult matter to gather a bough of its delicate white roses. These are small and numerous, often cream-coloured, rarely snowy white, and no less rarely having a blush of faint red on their petals. The small roundish buds, tinged with a streak or two of deep red, are exceedingly pretty. The plant often grows on open sandy heaths, lending its roses to grace the nosegay of wild thyme and other heath flowers; and on the chalky banks of Kent it thrives so well as to form a good thick hedge-row, while it is almost the only British Rose which may be found on the sandy seashore, where it often flourishes, though it becomes more dwarfed and spreading in its mode of growth. Gerarde calls it Pimpernel Rose, not because it in any way resembles the flower which we now call Pimpernel, but because its leaves are much like those of the Burnet, which, as has been mentioned, was called Pimpernel by the older writers. The black fruit, the Cat-hip of country people, when fully ripe, is very juicy, and the expressed juice, diluted with water, dyes silk of a peach colour, or, with the addition of alum, renders it of a rich violet hue, but it has little effect on muslin or linen. The leaves have often spots of a bright yellow hue upon them, which are caused by the fungus called Golden Uredo (*Urédo aurea*). Scarcely any species of Rose affords a greater number of varieties than this to the cultivator of flowers.

4. **Red-fruited Dwarf Rose** (*R. rubélla*).—Stem and branches thickly crowded with bristles; prickles few, straight and slender; leaflets simply serrated, naked, their disk without glands; fruit oblong, or cup-shaped, and pendulous. Plant perennial. It flowers in June, and its fruit is of a brilliant red colour. This is a very doubtful native. It has been reported from a few places on the sandy shores of Northumberland, and on the borders of the Dee at Abergeldy, but the records have not been authenticated.

5. **Irish Rose** (*R. hibérnica*).—Shoots and branches bearing scattered prickles, intermixed with a few bristles; leaves simply serrated, hairy beneath, their disk without glands; calyx leaf-like and pinnate; flowers mostly solitary, or two or three together. Plant perennial. The localities of this Rose are not confined to Ireland; it occurs also in England. Its fruit is crimson. It flowers in May, and continues for some months in blossom.

6. **Wilson's Rose** (*R. wilsóni*).—Prickles crowded and straight, intermixed with glandular hairs; leaflets serrate, and hairy on both surfaces, their disk without glands; fruit egg-shaped, somewhat cup-shaped. This scarlet-fruited species is found on the banks of the Menai, near Bangor, and at Derry. Its small white flowers expand in June and July. It is sometimes regarded as a variety of the next species.

7. **Prickly Unexpanded Rose** (*R. involúta*).—Prickles crowded, straight, and intermixed with glandular bristles; leaflets doubly serrated, hairy, glandular beneath. Plant perennial. This dwarf Rose is found in the Hebrides and Western Highlands, flowering in June.

1. CINNAMON ROSE.
   Rosa cinnamomea.
2. BURNET LEAVED ROSE.
   R. spinosissima.
3. DOG ROSE.
   R. lubrica.
4. PRICKLY UNEXPANDED ROSE.
   R. involuta.
5. VILLOUS ROSE.
   R. villosa.
6. SMALL-LEAVED SWEET BRIAR.
   R. eglanteria.
7. COMMON DOG-ROSE.
   R. canina.
8. TRAILING DOG-ROSE.
   R. arvensis.

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8. **Sabine's Rose** (*R. sabíni*).—Shoots and branches bristly; prickles scattered, straight, or nearly so; leaflets twice serrated and hairy, glandular beneath; sepals somewhat pinnate; fruit globose, dark red, and bristly. Plant perennial. Two varieties of this Rose occur, which have been by earlier writers described as distinct species. In one, the prickles are more numerous, the leaves very hairy, and the sepals almost simple; in the other, the larger prickles are hooked, and the sepals simple. This Rose is found in woods, and is almost entirely confined to the north of this kingdom. It is very similar to the last species, of which some consider it a variety.

* * * *Leaves glandulose. Prickles nearly uniform; bristles few or none.*

9. **Villous Rose** (*R. villósa*).—Prickles nearly straight; leaflets doubly serrated, downy, glandular; calyx segments slightly pinnate. Plant perennial. This Rose, which is found in the northern counties of England, has its sepals remaining after the fruit is ripened, and closing down upon it. It flowers during June and July, and has reddish blossoms. The plant is remarkable for its downy nature, and is sometimes called the Apple-bearing Rose, from its nearly globose fruit.

10. **Downy-leaved Rose** (*R. tomentósa*).—Prickles mostly uniform, straight, or curved; leaflets twice serrated, downy, glandular; calyx segments pinnate. Plant perennial. This species, which is not uncommon in hedges and thickets, has its large red Roses in June and July. It is remarkable for its stout and long shoots, and the downiness of its leaves, which are almost hoary. It is by many botanists considered to be a subspecies of the foregoing.

* * * * *Prickles, some hooked, some straight, intermixed with bristles; leaves with glands.*

11. **True Sweet-Briar** (*R. rubiginósa*).—Prickles numerous; leaflets twice serrated, hairy, glandular beneath, mostly rounded at the base; calyx pinnate, remaining attached to the ripe fruit; fruit, when young, pear-shaped. Plant perennial. Every one who has breathed the air perfumed by the odour of the Sweet-Briar must regret that the shrub, with its pretty pink Roses, is not more common on our waysides. It grows chiefly in the south of England, on open bushy places, especially on chalky soils, but it is far from being a frequent plant, except in gardens, where it is commonly and deservedly cultivated both for beauty and fragrance. It has been planted there for many centuries; for, in days when many of our modern Roses were unknown, this could be found in the garden of the monastery, or the "pleasure garden of the gentlewoman." Parkinson, who wrote his "Garden of Flowers." in 1629, enumerates it among those which he prized. "The great varietie of Roses," he says, "is much to be admired, being more than is to be seene in any other shrubbery plant that I knowe, both for colour, forme, and smell. I have, to furnish this garden, thirty sorts at the least, euery one notably different from the other, and all fit to be here entertained, for there are some others, that being wilde and of no beautie or smell, we forbeare, and leave to their wild habitations." Not only in our own country, but almost throughout Europe, this fragrant shrub is trained for

garden hedgerows, and it is thus used extensively in Australia. "One of the most charming peculiarities of the cultivated scenery of Tasmania," says Colonel Mundy, "is the Sweet-Briar hedges. To-day we were driving nearly the whole distance between them. In a great many places they were ten or twelve feet high, and the same in width, spangled all over, and scenting the air with fifty thousand delicate little roses. I noticed one or two thickets of this plant, which must have been forty or fifty feet in diameter, and twelve in height." This writer remarks, that about Hobart Town, both in the town-gardens and country enclosures, the delicate scent of these Roses absolutely monopolizes the air as a vehicle for its peculiar perfume; the closely-clipped mint borders, which in these gardens sometimes supply the place of box, however, overpower even the Sweet-Briar, as well as every other scent of the garden.

This Rose was introduced by the colonists, for although Roses are to be found in almost every country of the Northern Hemisphere, both in the Old and New World, from Sweden to the North of Africa; from Kamschatka to Bengal, and from Hudson's Bay to the mountains of Mexico, yet neither in Australia nor in South America is there any native Rose.

Our Sweet-Briar has bright green foliage, and its flowers are of deeper pink than most of our wild Roses. They expand in June and July. It is the Eglantine of the old poets. Chaucer calls it Eglantere:—

> "Where she sate in a fresh greene laurey-tree,
> On that further side even right by me,
> That gave so passing a delicious smell,
> According to the Eglantere full well."

Milton, who speaks of the "Twisted Eglantine," evidently refers to the woodbine or honeysuckle, but this was probably a mistake of the poet, as that flower does not seem ever to have been so called. Shakspere alludes to the sweetness of the leaf of the Eglantine; and Spenser, referring to the Sweet-Briar, says:—

> "Sweet is the Rose, but grows upon a breere,
> Sweet is the Eglantine that pricketh neere."

It seems always to have been a favourite flower, and is often alluded to in old works. In the "Queen-like Closet," or "Rich Cabinet," by Hannah Woolley, published in 1681, we find various directions for adorning houses with this and other flowers, and are told how to "dress up a chimney very fine for the summer," when a packthread dipped in bees'-wax and rosin, and fastened to the inner part of the chimney, was to be stuck all over with green moss and orpine flowers, and Sweet-Briar flowers, and sprigs were to be stuck on as if they grew. The orpine sprigs, this lady tells her readers, will grow for two months, and the Briar is to be renewed once a-week, but the moss will last all the summer.

12. **Slightly-scented Briar** (*R. inodóra*).—Prickles uniform and curved; leaflets doubly serrated, hairy, glandular beneath; sepals pinnate, rarely remaining attached to the fruit, which is oval, or nearly globular. The odour of the shrub is much like that of the Sweet-Briar, but fainter. A variety occurs in which the calyx is much larger, and remains on the ripened

hip; and in another form of the plant, the leaves are hairy on both sides. The flowers of this Briar are pink, expanding during June and July in woods and hedges, chiefly in the southern counties of England. By some regarded as a variety of *R. rubiginosa.*

13. **Small-flowered Sweet-Briar** (*R. micrántha*).—Prickles uniform, curved; leaflets twice serrated, hairy, glandular beneath; calyx segments long and pinnated, not remaining on the small egg-shaped fruit. Plant perennial. This plant is found on open bushy heaths, and in hedges and copses chiefly in the south of England, as well as in the south of Ireland. Though a local plant, it is abundant in some parts of Sussex and Surrey, bearing its small pink flowers in June and July. It is considered by some authors as a sub-species of *R. rubiginosa.*

14. **Small-leaved Sweet-Briar** (*R. sépium*). — Prickles numerous; leaflets small, doubly serrated, hairy, acute at each end, glandulose beneath; calyx pinnate. Plant perennial. This is a rare species, flowering in June and July. Its recorded habitats are near Bridport, in Warwickshire, and Heyford, Oxfordshire. It is probably only a variety of *R. rubiginosa.*

* * * * * *Shoots mostly without bristles; leaves without glands.*

15. **Common Dog-rose** (*R. canina*).—Prickles uniform, hooked; leaves smooth, or slightly hairy; calyx segments pinnate, and not remaining attached to the fruit; styles distinct. A number of varieties of this shrub are found; in one, the leaflets are keeled, and the serratures compound; in others, they are flat, and are more or less hairy. These have by various writers been described as distinct species. This is, above all others, the wilding Rose of England, for it is common almost everywhere, its deep pink or delicate blush-coloured young Roses and buds gleaming among the bright sprays of leaflets, and shedding on green lane and sunny bank, or shady wood, their sweet and rose-like odour. As the flowers expand fully, they become whiter. Few who have passed their early days in the country but can remember spots and occupations such as Clare describes, when alluding to a country maiden :—

> 'She eager scrambled the dog-rose to get,
> And woodbine flowers at every bush she met;
> The cowslip blossom, with its ruddy streak,
> Would tempt her furlongs from the path to seek;
> And gay long purple, with its tufty spike,
> She'd wade o'er shoes to reach it in the dyke;
> And oft was scratching through the briary woods
> For tempting Cuckoo-flowers and Violet-buds."

Some writers think that the reason why this pretty wilding Rose was called by our fathers Dog-rose, is that all the wild Roses or Briars were termed by the Greeks *Cynorhodon*, because the root was supposed to cure the bite of a mad dog. The Latins, who had the same notion respecting this root, called the Wild Rose *Canina*, and hence our commonest Rose received this name. Another of its names, the Canker Rose, was, however, doubtless expressive of contempt, and was most likely given to this flower because of its inferiority in size and odour to the garden Rose. In this contempt the poets

of those days fully shared. Shakspere in more places than one designates it thus :—

> "The rose looks fair, but fairer we it deem
> For that sweet odour which doth in it live.
> The canker-blooms have full as deep a dye
> As the perfumed tincture of the roses,
> Hang on such thorns, and play as wantonly
> When summer's breath their masked buds discloses ;
> But (for their virtue only is their show)
> They live unwoo'd and unrespected fade,
> Die to themselves. Sweet roses do not so ;
> Of their sweet deaths are sweetest odours made.

Notwithstanding this opinion, however, this Rose is not only beautiful, but even slightly fragrant. It is still called Canker Rose in Devonshire, and probably its old name lingers in the villages of some other counties. The blossom is generally over by July, but occasionally a few stray roses may appear on the bush in autumn, a circumstance which, in former times, was deemed a certain "signe of an insuing plague."

The Dog-rose affords several varieties of garden Roses, and some Rose-trees of this species attain a great age, the stems acquiring considerable thickness. Many of our hardy Rose plants are long-lived, though we have none which is like that Wild Rose-tree which Humboldt mentions as growing in the crypt of the Cathedral at Hildersheim, said to be a thousand years old ; though this writer adds, that it is the root only, and not the stem, which is proved by accurate and trustworthy original documents to be eight centuries old. "A legend," he says, "connects this Rose-tree with a vow made by the first founder of the Cathedral, Ludwig the Pious ; and an original document of the eleventh century says, that when the Bishop Hezilio rebuilt the Cathedral, which had been burnt down, he enclosed the roots of a Rose-tree within a vault which still exists, raised upon this vault the crypt, which was consecrated in 1061, and spread out the branches of the rose-tree on the walls. The stem, now living, is about twenty-six feet and a half high, and about two inches thick, and the outspread branches cover about thirty-two feet of the external wall of the eastern crypt ; it is doubtless of considerable antiquity, and well deserving of the celebrity which it has gained throughout Germany."

When the artist represents the floral badge of our country, he does not often depict our native Hedge-rose, for time and custom have sanctioned the practice of choosing one of those full Roses whose petals have been increased in number by culture, or which are the product of other lands. But the Rose is always beautiful everywhere, although the blossoms of Eastern countries and of Southern Europe far exceed ours in hue and fragrance. In Greece the lovely and fragrant Rose, known in England as the Cabbage-rose, is abundant, and it won for the Isle of Rhodes its name, while in some countries larger, though not sweeter, roses are to be found than these. Meyen tells of some thorny Rose-bushes, growing in the forests of Missouri, above St. Louis, which ascend to the tops of the highest trees, and adorn them with countless red blossoms.

The Holy Land has beautiful wild Roses still growing there ; and though doubtless our translators of Scripture have sometimes rendered an original

1. DICKSON'S ROSE
Rosa dicksoni.

2. RED FRUITED DWARF ROSE
R. rubella.

3. SLIGHTLY SCENTED BRIAR.
R. inodora.

4. TRUE SWEET BRIAR.
R. rubiginosa.

5. CLOSE STYLED DOG ROSE.
R. systyla.

word by rose, which refers to some other flower, and though the rose of Sharon is probably a species of *Cistus*, yet there is no doubt that the Rose itself is occasionally referred to by the prophetic writers, and that when the writer of the "Wisdom of Solomon" said, "Let us crown ourselves with rose-buds before they be withered," he referred to the Queen of Flowers. Old Jewish authors tell us that Jerusalem was distinguished from all the other towns of Judæa, as by several other particulars, in having no gardens nor any planted trees, excepting some Rose-bushes, which had existed there since the days of the ancient prophets. Beautiful wild roses have been seen in some parts of Palestine, expanding as early as the close of March; and Doubdan relates, that at the end of April roses were so plentiful in that land, that in some religious processions sacks full of rose-leaves were brought, from which handfuls were thrown on the people.

The Rose seems to have been cultivated from the most remote time in our own country; and records tell that early in the thirteenth century King John sent a wreath of roses to his lady, "*par amour*," at Ditton. "Roses and lilies," says Mr. T. Hudson Turner, "were among the plants bought for the Royal garden at Westminster in 1276. The annual rendering of a rose is one of the commonest species of quit-rent named in ancient conveyances. The extent to which the cultivation of this flower had been carried between the fourteenth and sixteenth century may be estimated by the varieties enumerated by Lawson—they are red damask, velvet, double Provence Rose; the sweet Musk Rose, double and single; and the double and single White Rose."

Elizabeth Barrett Browning, in her beautiful little poem, "The Deserted Garden," alludes to the flower:—

"Old garden Rose-trees hedged it in,
Bedropt with roses waxen white,
Well satisfied with dew and light,
And careless to be seen.

"Long years ago it might befal,
When all the garden flowers were trim,
The grave old gardener prided him
On these the most of all.

"And lady stately over much,
That moved with a silken noise,
Blush'd near them, thinking of the voice
That liken'd her to such.

"Ah, little thought that lady proud
A child should watch her fair white rose,
When buried lay her whiter brows,
And silk was changed to shroud.

"Nor thought that gardener, full of scorns
For men unlearn'd and simple phrase,
A child would bring it all its praise
By creeping through the thorns."

It would be a vain attempt were we to seek to enumerate all the species and varieties of Rose which in our own days render the garden so fragrant and beautiful, growing within the cottage palings, or decking the parterre of the palace, thriving best in the country, far away from smoke, of which they are very intolerant, some of them, as most of the yellow roses, refusing altogether to grow in town gardens. Several of these, like the white varieties

of the Provence Rose, are best when grown on a stock of the common Dog-rose; and the numerous China Roses, blooming almost all the year round, and peeping into the cottage window, or climbing up to the eaves, often tower above some of the Roses which are but varieties of our common hedge species.

All nations have prized the Rose. In ancient days even warriors wore wreaths of its flowers, and the Greeks and Romans strewed its petals over their dishes on festive occasions. When Cleopatra invited Antony to an entertainment, the royal apartments were covered with roses to a considerable depth. The Greeks and Romans planted the shrub on their tombs, or laid upon them its gathered flowers. Aubrey mentions the old custom existing at Ockley, in Surrey, of planting Roses in churchyards over the remains of those who were betrothed, which was probably the relic of a Roman custom. But all old poets, and historians of all places, extol the flower, from the "Romaunt of the Rose," by our own Chaucer, or the "Ghulistan, the Region of Roses" of the East, or that Persian metaphysical poem mentioned by D'Herbelot, "The Rose-bush," down to the writers of to-day. In Eastern lands the rose is prized above all flowers, and forms a continual source of allusion in Oriental writings. Various traditions of Scriptural personages, as well as those of their mythology, are connected with uses of the Rose; and many a poet of those sunny climes expresses the fancy which Jami records:—"You may place a hundred handfuls of fragrant herbs and flowers before the nightingale, yet he wishes not in his constant heart for more than the sweet breath of his beloved Rose." But we have wandered long from the wilding Rose of our woods and hedges, which is sometimes planted for its succulent hips. Their profusion on the trees was believed, as Lord Bacon tells us, to predict a severe winter, and modern rustics yet think so:—

> "The thorns and briars, vermilion-hue,
> Now full of hips and haws are seen,
> If village prophecies be true
> They prove that winter will be keen."

These are bright red, and have a pleasant acid flavour, which the pulp preserves when dried; and children eat them notwithstanding the silky bristly covering of the seeds, which has been known in some cases to cause painful irritation of the throat. The pulp of these fruits, beaten up with sugar, makes the conserve of hips sold by druggists, and a good pectoral medicine is derived from them. In former times, preparations made both from the fruits and petals were supposed to strengthen the heart and memory. Parkinson mentions among "the Physicale vertues" of this and other Roses, that the conserve is useful in "cooling heate of the eyes," and we have seen it most effectual for this purpose: this old writer also adds, "Divers doe make an excellent yellowe colour of the juyce of white roses, wherein some allome is dissolved, to paint or colour flowers, or pictures, or any such things." Gerarde tells of the "pleasant meates and banketting dishes" made of these fruits beaten up with sugar. Rose-water also was apparently used by our ancestors on some occasions; for in the charges in the account of a dinner of Lord Leiyster, Chancellor of the University of Oxford, in 1570, we have the

following item :—"For iij oz. of rose watere, for boylde meats and leaches and gelleys and drie leches, and march payne, and to wash afore dinnere and after dinnere, iijs. ix*d*."

Every one accustomed to gather our Wild Rose has seen those green mossy tufts on its branches, which in autumn are tinged with crimson, and which on being opened are found to contain small grubs. Country people call them robin's cushions, though the robin has no more to do with them than the toad with the toadstool. These excrescences are produced by the puncture of an insect, the *Cynips rosæ*, and the tufts themselves are known as *Bedeguars*. They are very astringent, and have been much used as a styptic, having been employed both externally and internally to check hæmorrhage.

Caroline White, whose thoughts on flowers are always true to Nature, has written for our volume this little poem on the Rose :—

"O bright imperial flower,
Whether by palace bower,
Or graceful wreathing round the poor man's cot ;
Crowning young beauty's head,
Or clasp'd by fingers dead,
Or marking out for Love one heap'd up spot ;

"Thou hast a brighter store
Of rich and varied lore,
Than unto earthly poet's page belongs ;
Garner'd in each sweet leaf,
Are tales of joy and grief,
Mocking the melody of written songs.

"Love, to which words are weak,
Thy blushing depths can speak,
And in the fond one's absence breathe his sighs ;
Yet as a trumpet's tone,
In days for ever gone,
Thou didst awake grim faction's battle cries :

"Now wreathing hall and bower,
Now twined for minstrel's dower
Or happier still, the chaplet of a bride
Now scenting rites divine,
On some cathedral shrine,
Or floating votive upon Gunja's tide ;

"Thine was the glowing wreath,
The pure and perfumed breath,
That at the banquet of Imperial Rome,
Temper'd the festive hour
With a refining power,
And twined the wine-cup with a thought of home.

"They cull'd thee for the breast
Of beauty in her rest :—
The pulseless rest—that coucheth in the tomb ;
And deck'd her in its trance,
As for some festive dance,
With gem-like tears and thy pale marble bloom.

"Feast, triumph, bridal, bier,
Joy's smiles, or Sorrow's tear,
Took radiance from thee, or a deeper woe :
Emblem of glowing Hope,
Of Life's fair promise broke,
Of Mirth, of Love, of shatter'd sweets laid low."

16. **Glaucous Dog-rose** (*R. cæsia*).—Prickles hooked ; leaflets doubly

serrated, and downy, without glands; sepals slightly pinnate. Plant perennial. This is very nearly allied to the common Dog-rose, and is perhaps but a variety of it, though its general appearance more resembles that of *Rosa tomentosa*. It is found in the north of England, and is in flower in June and July.

17. **Trailing Dog-rose** (*R. arvénsis*).—Prickles on the young shoots feeble; leaves smooth, their disk without glands; calyx slightly pinnate, not remaining on the fruit; styles united; stigmas forming a round knob. Plant perennial. This Rose may be known from all other native species by its slender trailing stems. The flowers, which are expanded from June to August, are white, growing mostly solitary, but sometimes two or three together. Though pretty, they have no odour. The shrub has fewer prickles than most of our wild Roses; it is common in woods and hedges in the south of England, but is rare in the north. It is sometimes called White Dog-rose, and is often, when in the garden, termed the Ayrshire Rose. It is generally fancied to be the rebel Rose, worn during the contests of the Houses of York and Lancaster. Gerarde speaks of a double white Rose which formerly grew wild in the hedges of Lancashire, but this was probably a garden variety, which was common then, but which never became naturalized.

A plant, called the **Bracteated Dog-rose** (*Rosa bractéscens*), found at Ulverston in Lancashire, and at Ambleside in Westmoreland, is remarkable for hairy bracts, which overtop its globose fruit. It is by most writers considered to be a variety of *Rosa arvénsis;* its leaflets are serrated, and downy beneath, and its pink flowers expand in June and July.

18. **Close-styled Dog-rose** (*R. stýstyla*).—Prickles hooked; leaves serrated, and pale green beneath, their disk without glands; sepals sparingly pinnate, not remaining on the fruit; styles united in a column; stigmas forming a round head. Plant perennial. The shoots of this rose are nearly erect, and sometimes attain the height of ten or twelve feet. It is found in hedges and thickets in various counties of England, and more rarely in Scotland and Ireland. Its white flowers expand in June and July. It is probably a variety of *R. arvénsis*.

15. Pear, Apple, Service, and Mountain Ash (*Pýrus*).

1. **Wild Pear** (*P. commúnis*).—Leaves egg-shaped, serrated; flowers in corymbs; fruit tapering at the base. Plant perennial. The large clusters of snowy white flowers of the Pear-tree are very ornamental to woods during April and May, and although this tree can hardly be said to be common there, yet it is found more or less in the wooded districts from Yorkshire southward. The fruits are so hard and harsh that even the schoolboy leaves them for the birds, and few would suspect them to be the original stock of the juicy and delicious Pears which we welcome to our table in autumn and winter. The tree is tall and erect, and though when cultivated the branches are thornless, yet they are not always so in the wild state. The wood is sometimes dyed black to resemble ebony, and is cut into bracelets. Wood-engravers formerly made their blocks of it, but it is far inferior to the box

1. WILSON'S ROSE
Rosa wilsoni.
2. SABINE'S ROSE
R. sabini.
3. DOWNY LEAVED ROSE
R. tomentosa.
4. SMALL FLOWERED SWEET BRIAR
R. micrantha
5. GLAUCOUS DOG ROSE
Rosa cæsia.

Pl. 75.

for this purpose. Gerarde says, that the plates of his book were cut out of this wood, as were, he adds, breastplates for English gentlewomen. The Persians are said to make their most beautiful spoons of the wood of the Pear-tree. When burnt to ashes it was also esteemed medicinal, and both this substance and the fruit were considered to counteract the poison of mushrooms.

The Wild Pear is of little use; but as, in making perry, harsh rather than sweet pears are chosen, it sometimes mingles with the cultivated fruit in the preparation of this beverage. In this country the manufacture of perry is chiefly confined to Worcestershire, and three pears form the armorial bearing of the provincial city. Nor is this the only instance in which the pear is used as an armorial escutcheon. Mr. T. Hudson Turner remarks: "The horticultural skill of the Cistercian monks of Wardon in Bedfordshire, a foundation dating from the twelfth century, produced, at some early but uncertain time, a baking variety of the pear. It bore and still bears the name of their abbey, figured on their armorial escutcheon, and supplied the contents of those Wardon pies so often named in old descriptions of feasts, and which so many of our historical novelists have represented as huge pasties of venison, or other meat suited to the digestive capacities of gigantic wardens of feudal days. It is time, in justice to these venerable gardeners, that this error should be exploded. Their application to horticultural pursuits, even up to the Dissolution, is honourably attested by a survey of their monastery made after that event: it mentions the 'great vineyard,' the 'little vineyard' two orchards, doubtless that in which the Wardon was first reared, and a hop-yard. The Wardon Pear is still known in the west and other parts of England. Lawson, whose 'New Orchard and Garden' was published in 1597, remarks that hard winter fruits and Wardons are not fit to gather until some time after Michaelmas: another author, of about the same date, says, Wardons are to be gathered, carried, packt, and laid as winter Pears are." Mr. Turner adds in a note, "The late editors of Dugdale's 'Monasticon' remark that Wardon Pears were sometimes called Abbot's Pears, but no authority is given for the assertion."

Pears having been known in this country at a very early period, it is likely that the Romans introduced some of the cultivated sorts. Pliny mentions Pears of various kinds which were grown in Italy, and says that a fermented liquor was made from their juice. It is amusing to read the names by which some of the Italian Pears were distinguished, though we can now no longer trace their identities with our own Pears. He tells of the Syrian, the Alexandrine, the Numidian, the Grecian, the Picentine, the Numantine, the Crustumine, and the Falernian Pears, of all of which the two last named were most valued. There were Tiberian Pears, named after the Emperor; and Barley Pears, and Aromatic Pears, and Laurel Pears, so called from their pleasant scents; some, which ripened the earliest and decayed the soonest, were reproachfully called Proud Pears. He remarked, that all pears have the property of wine, and were therefore cautiously prescribed by physicians. Chaucer often speaks of the "Pere," and a tradition tells that King John was poisoned by something mingled in a dish of pears by the monks of Swinstead, a tradition which at least would lead us to

believe that pears were then highly esteemed. The monks paid much attention to the culture of this fruit, and in accounts of the fourth and twentieth years of Edward I., among purchases made for the royal garden at Westminster Pears were enumerated; and there is extant a writ of Henry III., directing his gardener to plant the Caillou Pear both at Westminster and in his garden at the Tower. The pears mentioned in the bills delivered into the Treasury by the fruiterer of Edward I., in the year 1292, are the St. Régle, Caillou, Pessepucelle, Martin, Dreyes, Sorells, Gold-Knobs, and Cheysills, and the very high prices paid for them prove the great esteem in which they were held. Mr. Turner says, "There is still a common Scotch Pear, called the Golden Knapp, which is possibly the very sort supplied to Edward I., more than five centuries and a half gone by." When we come to the period of Henry VIII., we find various mention of the Pear by the herbalists and gardeners of his day. An old account of that monarch's household expenses has an item of twopence "to a woman who gaff the King peres." Gerarde, who, in Queen Elizabeth's time, had the superintendence of Lord Burleigh's fine garden, and who had himself in Holborn a large physic-garden, probably the best in this country at that time, says, that to write of the sorts of Apples and Pears, and "these exceeding good," would require a "particular volume." He tells of an "excellent grafter and painful planter, Master Henry Bunbury, who had them in his grounds," as had also "a most diligent and affectionate lover of plants, Master Warner, neere Horsly Down," and says they were "grown in divers places about London." Many of our common Pears originated on the Continent, hence some of those names which seem absurd now, but which are corruptions of old French or other languages. Such is the Bury Pear, which should be *Beurré*, probably because its juicy substance would melt in the mouth like butter. The *Boncrutching* of modern days is well known to be corrupted from the *Bon-Chrétien*, which is in itself an absurd name enough when applied to a Pear. One of its best varieties has a still more ridiculous appellation, being called the *Bon-Chrétien Turc*.

Everyone who has lived in the country can recollect seeing some ancient Pear-tree, still in spring showing its snowy clusters, and rich in autumn with its brown fruits, for the cultivated Pear-tree attains a great age, though it does not seem to be very long-lived in its wild condition. In the neighbourhood of Jedburgh Abbey, and in lands lying about various religious houses in Scotland, there are Pear-trees which, there is every reason to believe, were planted by the monks, and are between five and six hundred years old. The most remarkable English Pear-tree is mentioned by Dr. Neile, as standing in the glebe of the parish of Holme Lacy, in Herefordshire. The branches formerly hung down, and gradually reached the ground, where they took root. Each branch became a new tree, again producing others, till it extended itself so as to cover an acre of ground, and had it been allowed to remain unmolested would probably have extended further. In the year 1776, this tree produced enough pears for fourteen hogsheads of perry, each hogshead containing one hundred gallons. Though in these days reduced in size, it is said by this writer to be still healthy and vigorous, and to produce from two to five hogsheads. The Rev. C. A. Johns, remarking on this

tree, says, "An idea of its superior size may be formed from the fact, that in the same county an acre of ground is usually planted with thirty-two trees, which in a good soil produce annually, when full grown, twenty gallons of perry each. So large a quantity as a hogshead from one tree is very unusual."

Though perry is less prized now than in former days, yet the pear retains its eminence as a valued fruit. The varieties which culture has produced from our harsh wild Pear are almost innumerable, and above six hundred were enumerated some years since. One of them, the Choke or Iron Pear, well deserves to be so called when growing wild, or almost so, but when carefully treated it loses all its hardness. In few plants can we trace the value of horticultural skill more than in this, for all the numerous baking and dessert pears have come from a fruit which would not even tempt one who was hungry enough to feed on blackberries and hips. The Continental pears are generally superior to those grown in Britain, but, according to Marco Polo, the pears of China far exceed any known in this land, for they are said to weigh ten pounds each, and their white pulpy interior to be both fragrant and delicious.

We sometimes hear of the Australian Pear-tree (*Xylomelum*), but Colonel Mundy's description of its produce is not very inviting. The various common trees, he says, having been named by savages, have not always very suitable appellations. Thus, he remarks, that the swamp-oak has the aspect of a laurel, and Pomona herself would indignantly disown the Apple-tree, for there is not a semblance of a pippin in its tufted branches, though a shingle of the beef-wood looks precisely like a beef-steak. The cherry-tree resembles a cypress, but is of a tenderer green, bearing a worthless little berry having its stone or seed outside, hence its name of *Exocarpus*. The Australian pear, then, is no pear, but a pear-shape of solid wood, hard as heart of oak. Nothing short of a mallet will break it, yet for the procreation of its kind its inedible body spontaneously and gently opens to drop out the two winged seeds.

2. **Crab Apple** (*P. málus*).—Leaves simple, egg-shaped, serrated; flowers in a sessile umbel; styles combined below; fruit with a hollow beneath. Plant perennial. The Wild Apple is a small spreading tree, bearing in May its rich rosy tinted clusters of flowers. In later months the small sour "blushing crab" ornaments the bough. The sourness of the crab is well known enough to have originated a popular proverb. The fruit both of the wild and cultivated Apple-trees abounds with malic acid, which is in the sour or sweet sorts more or less predominant, and which mingles with larger or smaller proportions of sugar, gum, essential oil, and bland pulpy material. The expressed juice of the unripe Crab Apple is exceedingly sour, and in times when vinegar was commonly employed in making whey, syllabub, or other confectionery, the fruit was often gathered to be used instead. Vinegar made from this crab is still prized in villages as an application to cure sprains and scalds, and to curdle the whey used as medicine for colds. The juice, too, is imagined to be a good cosmetic.

Our wild fruit tree, though offering little worth in its produce, is very serviceable both in this country and on the Continent, for on this stock have

been grafted the apples of which horticulturists have obtained so many varieties. The *Pyrus malus* of our woods comprehends two varieties of the tree, which Decandolle considers as two distinct species—one, which has a smooth calyx tube, and the other having that portion downy. The first, which is termed *acerba*, is the *Pommier à cidre* of the French, and is by this botanist considered to be the origin of our cider apples; while the latter, *mitis*, the *Pommier à couteau*, he regards as that from which are derived the apples used at our tables, but botanists generally consider them merely different forms of the same tree.

Our cider is the old Anglo-Saxon word *Sieder*, and our apple is from their *Aeppel*, and these people most probably cultivated the plant at an early period in this country. It is not unlikely that the fruit was one with which the Romans enriched this soil, and which, after their departure, the Saxons found already growing here. The Apple was afterwards cultivated in the gardens of the monasteries, and the Oslin, or Arbroath pippin, was either introduced or extensively cultivated by the monks of the Abbey of Aberbrothwick; while old herbalists relate that the Nonpareil was brought from France by a Jesuit in the time of Queen Mary. Chaucer refers to the apple most common in early times—

"Your chekes embolmed like a mellow costard;"

and as we advance in the history of the Apple, we find numerous sorts in the lists of old writers. Michael Drayton, whose "Poly-olbion" was published in 1613, speaking of the orchards of Kent, says:—

"The pippin, which we hold of kernel fruits the king;
The apple orange; then the savoury russetan;
The pearmain, which to France long ere to us 'twas known,
Which careful fruiterers now have denizen'd our own;
The renat, which though first it from the pippin came,
Grown through his pureness nice, assumes that curious name;
The sweeting, for whose sake the schoolboys oft make war,
The wilding, costard, then the well-known pomewater,
And sundry other fruits of good yet several taste,
They have their sundry names in sundry counties placed."

Many of the best Apples appear from their names to have been brought from France. "One sort only is named," says Mr. Turner, "in any account of the thirteenth century that has fallen under my observation, the Costard; it occurs in the fruiterers' bills of the year 1292, but as this fruit was very generally cultivated from an early period, there must have been many varieties known." A reference to this fruit yet exists in the name of Costard-monger, which is an old English term for a seller of vegetables, and was given because these Costard apples would be one of his chief commodities, the large round bulky Costard being in more general use than the more delicate apples, most of which, indeed, were not cultivated in this kingdom till the reign of Henry VIII. The writer before referred to, Mr. Turner, says, "The pearmain was certainly known by that name soon after the year 1200, as Blomefield instances a tenure in Norfolk by petty serjeanty, and the payment of two hundred pearmains, and four hogsheads of cider, or wine made of pearmain, into the Exchequer at the feast of St. Michael yearly.

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Cider was largely manufactured during the thirteenth century, even as far north as Yorkshire. Thus, in 1283, the bailiff of Cowick, near Richmond, in that county, stated in his account that he had made sixty gallons of cider from three quarters and a half of apples. Our forefathers considered the apple to be a 'soft fruit,' and more wholesome than the pear. Necham records that an apple swims when thrown into the water, while a pear will sink."

The pippins, which were so called because the trees were raised from pips or seeds, and would produce fruit without being grafted, were brought from France, according to Fuller, in the sixteenth year of Henry VIII., and half a century after we find them well known, as Justice Shallow says, "You shall see mine orchard, where, in an arbour, we will eat a last year's pippin of my own graffing;" but the golden pippin, the renat of Michael Drayton, was called the *Reinette d'Angleterre*, and is by the Dutch now called *Engelsche goud Pepping*. It was an apple of English and not of foreign origin, having, it is said, been first raised at Parham Park in Sussex. Catherine of Russia, who was fond of this apple, had it brought every year from England for her use. The cider orchards of Herefordshire, so beautiful in May with their masses of rosy flowers, were first planted in the time of Charles I.; and before the time of Charles II., cider, which had been in some measure in use for nearly a century before, had become a chief beverage of the nation. Gerarde says, in 1597, "I have seen about the pastures and hedgerows of a worshipful gentleman's dwelling, two miles from Hereford, called Mr. Roger Badnome, so many trees of all sortes, that the servants drink for the most part no other drink but such as is made of apples. The qualitie is such, that, by the report of the gentleman himselfe, the parson hath for tythe many hogsheads of cider." This old herbalist was a great advocate for planting this tree, for he says, "Gentlemen, that have land and living, put forward, in the name of God; graffe, set, plant, and nourish up trees in every corner of your grounds; the labour is small, the cost is nothing, the commoditie is great, yourselves shall have plentie, the poor shall have somewhat in time of want to relieve their necessitie, and God shall rewarde your good mindes and diligence." The value of the apple as an edible fruit is enhanced by the length of time which it may be kept, thus affording a store of fresh fruit throughout the winter and spring. Cornwall and Devonshire have always produced good apples, and the Cornish gilly-flower apple has a well-deserved renown. The beautiful Ribston pippin, with the streaks of red tingeing its russet surface, was raised at Ribston Park in Yorkshire, and good apples are grown extensively in Kent and other counties. The chief apple or cider counties lie in the form of a horse-shoe around the Bristol Channel, and many acres of orchard land in Devon, Somerset, Worcester, and Hereford are full of Apple-trees, affording employment in the fruit season to large numbers of poor people. Cider is still in use in farmhouses as a common beverage in many parts of the kingdom, but it is not easy to compute the quantity which is produced, as there is now no duty on that liquor.

Many persons have so long accustomed themselves to speak of the fruit which Eve plucked in Eden as an apple, that careless readers of Holy Writ

almost regard it as a fact recorded there; and some, who forget that in the eyes of God the motive of an action constitutes either its worth or its guilt, treat lightly the sin of our first parents, and speak of eating the apple as a small matter. But the apple has no more claim to be considered the forbidden fruit than has the shaddock, which has long been sold under that name, or than that fruit which the sages of Ceylon pronounce to be forbidden to human taste. These priests having proved to their own satisfaction that Ceylon was the site of Paradise, assert that the fruit was borne on a tree which they call *Divi Ladner*. This they infer not alone from the extreme beauty of the fruit and the sweetness of the flower, but from the conclusive fact that the former still bears the marks of the teeth of Eve. The fruit is now poisonous, but they add that previously to Eve's transgression it was delicious.

The Apple is often mentioned by the Scripture writers, and the tree grows in Palestine, but produces good fruit only in one or two places of that land, as at Lebanon. The citron is probably the tree intended, as it is among the most valuable of the fruits of Palestine, and would be fitted to occupy the place which the prophet Joel gives it among the vine, the fig, the pomegranate, and the palm.

The Apple-tree is not remarkable either for size or longevity, and in an old orchard the Pear-trees far outlive those of the Apple, though occasionally we find one of the latter attaining considerable age.

The fruits boiled, baked, dried, roasted, or made into tarts and jellies, need no praises, and besides these purposes to which apples are commonly applied, it has been ascertained by M. Duduit de Maizières, that one-third of boiled apple-pulp baked with two-thirds of flour, having been previously fermented with yeast for twelve hours, will make a very palatable, light, and nutritious bread. A summer beverage, called apple-wine, is also very good, though not equal to cider. An elegant chalybeate has been obtained from a solution of iron, which exists in the juice of the golden renet. The famous winter beverage of our forefathers, termed lambswool, was the grand ingredient of the wassail-bowl. Archdeacon Nares has preserved the following recipe for its composition: "The pulpe of the roested apple, in number four or five, according to the greatness of the apples (especially the pomewater), mixed in a wine quart of faire water, laboured together untill it comes to be as apples and ale, which we call lambswool." In Herrick's "Hesperides" we find an allusion to this frequent beverage:—

> "Next crown the bowl full
> With gentle lambs-wooll,
> Add sugar, nutmeg, and ginger,
> With store of ale too."

Gerarde, referring to the uses of the apple, says, "There is an ointment made with the pulp of apples and swine's grease, and rose-water, which is used to beautify the face, and take away the roughness of the skin; it is called in shops pomatum, of the apple whereof it is made." Our modern pomades and pomatums, the offsprings of this, cannot, however, boast the apple as an ingredient.

The use of apples was commended in "splenaticke" and melancholy dis-

orders; and the Court physician to the Queens Mary and Elizabeth, John Key, better known by his Latinised name of John Caius, seems to have had a high opinion of its fragrance, sickly as we now deem it in a closed room. This physician wrote in 1552 his work, entitled, "A boke or Counseill against the Disease commonly called the Sweate, or Sweatynge Sicknesse. Made by John Caius, doctour in physicke. Very necessarie for everie personne, and much requisite to be had in the handes of al sortes, for their better instruction, preparacion, and defense against the souddein comynge and fearfull assaulting of the same disease." The chief remedies consisted in keeping the patient very warm, and posset-ale, with parsley and sage put in it, was one of the medicines. If the patient recovered, and found his strength wasted, he was to "smell to an old swete apple;" for, adds Dr. Caius, "there is nothing more comfortable to the spirits than good and swete odours."

Some of the exotic Crab-apple trees are among the most beautiful plants of the shrubbery. The Chinese Crabs, with their rich pink blossoms mingling with the buds of deeper red, and the Siberian Crabs, with their red apples, are common and attractive plants, and furnish fruits well fitted for preserving with sugar. In Siberia, these crab apples are used in making punch.

3. **Wild Service-tree** (*P. torminális*).—Leaves egg-shaped, with several deep and sharp serrated lobes; flowers in corymbs. Plant perennial. This tree is much like the hawthorn, and its glossy green leaves have a similar form to those of that shrub. It is a small tree, its white flowers appearing in May, and the leaves being larger than those of the May-bush. The small fruits are of a greenish brown colour, dotted all over. It is found here and there in the woods and hedges of the south of England, and is in some places called Maple Service. The author of this volume has seen it occasionally in the Kentish woods, and has eaten of its berries, which resemble the medlar in flavour, and, like that fruit, are not good till they are beginning to decay, or, as the country people say, till they are "wilted." The fruits are very plentiful on the Service, and boys gather the clusters, and, tying them upon sticks, carry them into towns for sale, when they are hung out of doors for a night, in order that a process of fermentation may soften and fit them for eating on the morrow. These berries have a pleasant flavour, and are nearly as large as the hips of the sweet-briar. In Kent, they are called Chequers. Gerarde says of this tree, "In Kent it groweth in great abundance, especially about Southfleet and Gravesend;" but the woods there in which our herbalist saw it are now probably all cleared, for buildings have encroached on the ancient woodlands. The plant grows wild throughout Europe.

The Service-tree is said to attain sometimes the height of fifty feet. Its wood is hard and close-grained, so that it is useful to turners and carvers; and for gun-stocks, and some part of carriage-wheels, the wood is preferred to any other. It is very durable, and is therefore sometimes selected for the timbers of houses built in exposed situations.

4. **True Service-tree** (*P. doméstica*).—Leaves pinnate, downy beneath; leaflets serrated upwards; flowers in panicles; fruits large, and egg-shaped. Plant perennial. This species, which is often called *Pyrus sorbus*, is not a

native, only one instance being recorded in which it seems to grow quite away from cultivated spots; this is a solitary tree in Wyre Forest, near Bewdly, in Worcestershire. The tree has much the aspect of the Mountain Ash, but the fruits are considerably larger than the Rowan berries. Its showy white flowers appear in May. It is not very often cultivated in England; but in some parts of France, and near Genoa, it is reared for its fruits, two varieties being grown, one termed the apple-fruited, the other the pear-fruited Service. These fruits are not eaten until in a state of incipient decay. The trees so common in our shrubberies, called the Pinnatifid and the Hybrid Service-trees, bear similar fruits in abundance. They are both varieties of the Beam-tree (*Pyrus aria*). The True Service-tree is a native of the south of Europe, where it attains a much larger size than with us. It also grows in many northern countries, as in Kamtschatka, where the natives use the berries as food. In some parts of the North, an ardent spirit is produced from them by distillation.

5. **Mountain Ash** (*P. aucupária*).—Leaves pinnate, serrated; flowers in corymbs; fruit nearly round. Plant perennial. This tree, with its graceful feathery leaves, is familiar to us from being so frequent in gardens, shrubberies, in squares, and walks of cities, where may be seen—

> "The Mountain Ash, whose crimson berries shine;
> The flaxen birch, that yields the fragrant wine!"

It is sometimes twenty feet high, and the bright green leaves, which when young are downy on the under surfaces, are formed of from seven to nine pairs of leaflets, terminated by an odd one. The flowers, which grow in dense clusters, and are greenish-white, appear in May; they are neither so large nor so handsome as those of the hawthorn, but have somewhat of their sweet fragrance. In autumn, however, the tree is more beautiful than in summer; for at that season the rich cluster of red fruits gleams among the foliage, each berry having the form of a tiny apple, and containing a little core and seeds within. The child strings the berries for necklaces, and the cook gathers them to garnish the dishes. To most people their flavour is rather agreeable, and a few may be safely eaten; but children should not be allowed to eat these astringent fruits in large numbers. In Wales, ale and beer are made of the berries, and the poor people prepare from them a fermented liquor, very similar in flavour to perry. In the Highlands, a spirit is distilled from them. To the thrush and blackbird they are invaluable; and when we mark the havoc made by these birds on the berries, we must recall the songs of last spring, or look forward to that which is coming, as payment for the mischief. The old use of these berries by bird-catchers is recorded in one of the familiar names of the tree, the Fowler's Service, and they are still employed to allure birds into the net. A good colour for dyeing is also obtained from them. In some of the German burial-grounds, the surface of the tomb is raked smooth, and crosses, initials, and various devices are made by laying the Mountain Ash berries in the soil; while on other graves the mourners form these crosses of the white waxen fruits of the Snowberry.

The Rowan-tree is frequent in woods and hedges in mountainous districts,

1 COMMON MEDLAR.
Mespilus germanica.

2 HAWTHORN.
Crataegus oxyacantha.

3 COTONEASTER.
Cotoneaster vulgaris

Pl. 77.

often hanging out its branches from rocky crevices of the Highlands and Western Islands of Scotland. On the hills of Cheshire it is a dwarf shrub rather than a tree, and may sometimes be seen there with its branches full of leaves, and its stems not more than nine inches high. Its astringent bark is used by tanners.

The old notion that the Mountain Ash, or Rowan-tree, as it is called in the north, was efficacious against witchcraft and the evil eye still survives in the north of England and the Scottish Highlands. Pennant remarks, in his "Tour of Scotland," that the farmers carefully preserve their cattle against witchcraft, by placing branches of honeysuckle and Mountain Ash in their cow-houses on the 2nd of May. The milkmaid of Westmoreland may often be seen, even now, with a branch of this tree either in her hand, or tied to her milking-pail, from a similar superstition; and, in earlier days, crosses cut out of its wood were worn about the person. In an old song, called "Laidley Wood," in the "Northumberland Garland," we find a reference to this:—

"The spells were vain, the hag return'd
To the Queen in sorrowful mood,
Crying that witches have no power
Where there is Rown-tree wood."

The words in Macbeth, "Aroint thee, witch," are thought by some commentators on Shakspere to have become gradually corrupted, and to have stood originally thus—

"A Roan-tree, witch!

This tree has also the old names of Quicken-tree, Roddon, and Witchen-tree, and is, with good reason, supposed to have been one of the Druidical sacred trees. The superstitious ideas connected with it are certainly of very ancient origin; and it is very remarkable that Bishop Heber, when in Upper India, saw a tree very similar to this, which was an object of reverence. When this writer was at Boitpoor, he says, "I passed a fine tree with leaves, at a little distance, so much resembling those of the Mountain Ash, that I was for a moment deceived, and asked if it did not bring fruit. They said no; but that it was a very noble tree, being called the Imperial tree, for its excellent properties; that it slept all night, and wakened and was alive all day, withdrawing its leaves if anyone attempted to touch them. Above all, however, it was useful as a preservative against magic; a sprig worn in the turban, or suspended over the bed, was a perfect security against all spells or the evil eye, insomuch that the must formidable wizard would not, if he could help it, approach its shade. 'One, indeed,' they said, 'who was very renowned for his power (like Loorinita in the Kehama) of killing plants and drying up their sap with a look, had come to this very tree, and gazed on it intently; but,' said the old man who told me this, with an air of triumph, 'look as he might, he could do the tree no harm.'" The Bishop adds, that it is very remarkable to find the superstition which in England and Scotland attaches to the Rowan-tree, here applied to a tree so similar. "Which nation," he asks, "is in this case the imitator? or from what common centre are all these common notions derived?"

The wood of the Mountain Ash is finely grained and hard. It is used by

turners, and in the old days of archery it was considered as inferior only to that of the yew for bows. The bark and roots are said by Professor Lindley to contain so large a quantity of essential oil of almonds, as to yield as large an amount of hydrocyanic acid as an equal quantity of the leaves of the cherry laurel.

6. **White Beam-tree** (*P. aria*).—Leaves egg-shaped, serrated, cut, or pinnatifid, or partly pinnate, white and downy beneath; flowers in corymbs; fruit globular. Plant perennial. This is a small tree, easily distinguished by the beautiful white hue of the under surface of its leaves. This whiteness is very ornamental, for when the wind turns up the foliage it contrasts with the rich green upper surface, and is conspicuous even at a great distance, while the young shoots look white as snow in their dense covering of down. The tree is not very large, nor is it very frequent. It grows chiefly in mountainous woods, especially where the soil is of chalk or limestone. The fruit is red, rather larger than that of the Mountain Ash, and the flowers, too, are large and white, appearing in May and June. The berries are much eaten by birds, and if kept till decay commences, are palatable to man. The wood is used for various purposes, and has from earliest ages been valued for axles and shafts; hence its name of Beam-tree. There are several varieties of this plant.

16. MEDLAR (*Mespilus*).

Common Medlar (*M. germánica*). — Leaves lanceolate, undivided, downy beneath; flowers solitary. Plant perennial. A variety of the Medlar is sometimes found in which the leaves are doubly serrated. The tree occurs rarely in hedges in various parts of this kingdom, and though not a true native, it appears to have been long naturalized, in the Midlands and southern England. The tree is not largely cultivated in this country. One or two varieties, chiefly that called the Dutch Medlar, are to be found in gardens and orchards, where the crooked branches may be seen in May, bearing their large white flowers. The fruit, austere and hard as it is while on the tree, has a very pleasant acid flavour when gathered and ripened almost to decay. Its hardness suggested the name from the Greek, signifying half bullet. The tree is called in Germany *Der Mispelbaum*, and it is the *Mispelboom* of the Dutch. The Italians term it *Nespolo;* and the French name *Néflier* is from the Celtic *naff*, which signifies truncate, and alludes to the form of the fruit. The tree called Savoy Medlar belongs to another genus of plants. Some Canadian Medlar-trees produce excellent fruits.

The Medlar was a fruit much prized by our forefathers, and supposed by them to have various medicinal virtues, among others that of strengthening the memory. The dried leaves were also powdered and laid on wounds, and various salves and plasters were made of the dried fruits. Chaucer says:—

> "And as I stood and cast aside mine eie,
> I was ware of the fairest medle-tree,
> That ever yet in al my life I sie."

17. HAWTHORN, WHITETHORN, OR MAY (*Cratægus*).

Hawthorn (*C. oxyacántha*). — Leaves smooth, cut into from 3 to 5 deeply serrated segments, wedge-shaped at the base; flowers corymbose.

Plant perennial. A welcome sight in early spring are the green knots of the Hawthorn-tree. In March they are just breaking forth into leaves, and daily expanding further, till in May every bough is feathered with delicate green spray, and the small ivory balls are opening into cups studded with pink stamens. The Hawthorn is seldom in flower on the 1st of May, though before the alteration of the Calendar, when May Day was twelve days later than it now is, the flowers may often have been out by May Day. Doubtless those days were very mirthful ones, and linked with many pleasing associations, when, as Chaucer describes :—

"Fourth goeth al the Court both most and lest,
To fetch the flouris fresh, and branche and blome."

And when not the courtiers only, but the lowliest of men and maidens sallied forth—

"To do observaunce to a morn of May."

Bourne tells us, in his "Antiquities," that all ranks of people went out "a maying," and that the juvenile part of both sexes were wont to rise a little after midnight on the morning of the day, and walk to some neighbouring wood, accompanied by the blowing of horns and other music, when they broke down branches of the trees, and adorned them with nosegays and crowns of flowers. This done, they returned home at sunrise, and decked the doors and windows with the tokens of the flowering spring. Chaucer, Herrick, Shakspere, Milton, and many another poet might be cited as adding their testimony to these usages: and Henry VI. desired Lydgate, then a monk at Bury, to write a joyful poem for May Day. This poem contained sixteen stanzas, setting forth the various processes of Nature in sap and leaf, and ending with a commendation of May Day games. Spenser, in his "Shepherd's Calender," says :—

"Youth's folke now flocken in every-where
To gather May buskets and smelling breere,
And home they hasten the postes to dight,
And all the kirk pillars ere daylight,
With Hawthorn buds and sweet eglantine,
And girlonds of roses and sops in wine.

* * * *

To see these folkes make such jovisaunce,
Made my heart after the pipe to daunce;
Tho' to the greene woodes they speeden them all,
To fetchen home May with their musicall;
Oh that I were there,
To helpen the ladies their May-bush to beare!"

Innocent as these customs were in their design, and often doubtless in their enjoyment, yet, in the neighbourhood of large towns especially, they became somewhat like the ancient Floralia, from whence they were derived, and the virtuous gradually withdrew from the scenes of riot and dissipation, so that the Maying, and the setting up of Maypoles, and the going out to gather the May-dew for the beautifying of the complexions, have all passed away, leaving us no trace of these doings save in the little garland yet borne by country children on May Day from house to house. The Reformers strove to abolish the May games, and gradually succeeded in so doing. Bourne,

who was an implacable enemy to festivities of this kind, describes them in such terms as leaves us nothing to regret that in our days they have ceased, for he says the people "daunced about the Maypoles, as the Heathen people did at the dedication of their idolles, whereof it was a perfect pattern, or rather the thing itselfe."

But as the poets of former days praised the usages connected with the Hawthorn, so they have not been slow to praise the beauties of the tree itself. It is, when fully grown, a picturesque tree, with its gnarled trunk and wide extent of green boughs covered with the fragrant flowers of May, and casting a broad and deep shadow. From Chaucer downwards we find continual allusions to it:—

"Amongst the many buds proclaiming May,
Decking the fields in holiday array,
Striving who shall surpass in braverie,
Marke the faire flowering of the Hawthorne-tree,
Who finely cloth'd in a robe of white
Fills full the wanton eye with May's delight."

Burns speaks of—

"The Hawthorn budding in the glen."

Clare has a beautiful little poem, "The Wild-wood Bower," on this tree, which was treasured in "Memory's Calendar;" and Robert Nicholls says:—

"The Hawthorn hangs its clusters round me now,
Through which the sky peeps sweetly sweetly in;
Through the green glades doth come the cattle's low
From the rich pastures of the meadow green;
Look up! aloft the twittering birds are seen,
Upon the branches their wild matins singing,
Look down! the grass is soft, and thick, I ween,
And flowers around each old tree root are springing,
Wood fancies wild and sweet to the lone wanderer bringing."

The Hawthorn when young grows rapidly, but as it becomes older increases but slowly. Its name of Quickset it derives from its being the tree usually selected for making quick, that is, living, hedges. These hedges seem to have come into use in the time of Charles II.; and Evelyn says that he has raised hedges four feet high in four years from seedlings taken from the woods. After a time the growth of the plant is slow, and those old trees which we find scattered about in woodland, field, or hedge, were many of them planted centuries ago. Thorny as the young boughs are, some of these old trees are almost without spines. Sometimes a tree separates into a number of distinct stems, looking like a clump of distinct trees, but on examining them we find them connected at the base into one. The wood of this species, as well as that of the scarlet thorn, the cockspur thorn, fire thorn, and indeed of all kinds of Thorn, is remarkably tough, so much so that the genus *Cratægus* seems to have been so called from the strength of the wood. The hard, firm timber of large trees is very valuable, but the slow growth of the Hawthorn into any great size renders the tree little available for any purpose save for walking-sticks, or such small articles as its boughs may furnish: it is of a yellowish-white colour, and is ornamental

when polished. The branches are sometimes used in the country for lighting ovens, as they burn well even while green; but the chief use of the Hawthorn is for those green impenetrable hedges which bound our meadows and lanes, which are so hardy that they are not even killed by the sea-breeze, and which when whitened by their flowers are one of the greatest beauties of the rural landscape. By frequently pruning the upper parts of these hedges the side branches increase in size and thickness, and these, with their tough wood beset with sharp thorns, present a firm barrier against the intrusion of man or beast. In early spring, when wet with rains, some of these branches look like shining copper.

But the Hawthorn has not lost all its beauty when old and almost destitute of its own green leaves; the ivy winds about its stem and boughs, and the grey lichens crowd on its rugged trunk, as Wordsworth says:—

"Like rock or stone it is o'ergrown
With lichens to the very top,
And hung with heavy tufts of moss,
A melancholy crop:
Up from the Earth these mosses creep,
And then, poor Thorn, they clasp it round,
So close, you'd say that they are bent
With plain and manifest intent
To drag it to the ground;
And all seem join'd in one endeavour
To bury this poor Thorn for ever."

The chief lichens which thus hang on the old tree are the Hairy Old Man's Beard (*Usnea barbata*), the Stag's Horn (*Evernia prunastri*), and the Mealy Ramalina (*Ramalina farinosa*). The bright yellow crusts of the Orange Parmelia (*Parmelia parietina*) sometimes also cover both trunk and boughs, not only of these old trees, but of others which form hedges.

Many an old Hawthorn-tree is the subject of ancient legend, or has long served as a landmark, or been recorded by the mariner in his book as a mark by which to guide his vessel. On many a village green, too, the old tree is prized, as was that of "Sweet Auburn":—

"The Hawthorn-tree, with seats beneath the shade,
For talking age or whispering lovers made."

The very tree, respecting which Goldsmith wrote these lines, was living within existing memories in the village of Lissoy, the Auburn of the poet. It was strengthened and supported by a heap of stones cemented together and placed around it; but unfortunately, about fifty years since, it was knocked down by a cart laden with apple-trees, which the carter was driving into Ballymahon, and which struck against the aged and picturesque Thorn, and laid it low. It remained in this condition till it was removed, bit by bit, by persons who prized it as a relic, but the root is still preserved by a gentleman of Athlone. Mr. and Mrs. Hall, who, in their work on Ireland, record these facts, add in a footnote an anecdote quoted by Mr. Prior, from an American traveller, Davis:—"Some years ago, in the United States, Mr. Best, an Irish clergyman, informed this traveller that he was riding with Brady, titular Bishop of Ardagh, when he observed, '*Ma foy*, Best, this huge bush is mightily in the way: I will order it to be cut down.' 'What, Sir,' says Best, 'cut down Goldsmith's Hawthorn bush that supplied so beautiful an image in the "Deserted Village"!' '*Ma foy*,' exclaimed the

Bishop, 'is that the Hawthorn bush? then ever let it be saved from the edge of the axe; and evil be to him that would cut from it a branch.'"

A Hawthorn-tree, which stands connected with older associations than this, is still living; this is the Hawthorn of Cawdor Castle, near Inverness. It is a tree of great antiquity, and very remarkably preserved. This castle has stood from time immemorial, and tradition relates that the original proprietor of the edifice was directed by a dream to build a castle exactly upon the spot, and this was done in such a manner as to leave no doubt that the tree existed long before the structure was reared. The trunk of the tree with its knotty protuberances is in a vaulted apartment at the base of the principal tower, its root branching out beneath the floor, and its top penetrating the vaulted arch of the stone above in such a manner, that any person seeing it would feel assured that the masonry was adjusted to the size and form of the tree, a space being left at the top of the vaults through which its boughs might be reared. From the most remote times it had been customary for guests to assemble themselves around this tree, and drink success to the House of Cawdor.

But of all the Hawthorns connected with other days, none is more remarkable than the Glastonbury Thorn. The high ground on which the Abbey of Glastonbury stands was, in early days, called the Isle of Avelon. Tradition tells that Joseph of Arimathea with twelve companions came hither to preach the Gospel. This missionary is said to have borne with him a trusty staff, which, placed in the ground during sleep, was when he awoke grown into a tree bearing snowy flowers on its boughs. This miracle of course implied that something important was to be done on the spot. Joseph, concluding that his staff, being thus, as it were, taken from him, was to be used no more, made this his resting-place, and built here a chapel, which after many additions and improvements became the magnificent abbey of later years.

But if we believe the legend, the Thorn had not wholly fulfilled its work when it had indicated the site of the monastic institution—it was destined to remain a wonder to succeeding generations. Not content with believing the actual fact, that this singular tree produces its flowers about Christmas time, the men of other days believed that it invariably budded on the 24th of December, was fully blown next day, and that the bloom withered on the following night. In those times, when neither newspapers, nor books, nor familiar letters were common things, superstitions, told from place to place by travelling monks, were readily accredited, and the Thorn connected with such marvels was so prized, that the blossoms were sought for by people of all nations, and pieces of the Thorn were exported into distant lands by Bristol merchants. Even in later days, when superstition was somewhat on the wane, King James, Queen Anne, and many of the English nobility, gave large sums of money for cuttings from the original Thorn. Until the time of Queen Elizabeth the Hawthorn had two trunks, one of which was cut down by a zealous Puritan. According to a writer of those times, James Howell, this desecration was not unpunished; "He was," says this writer, "well served for his blind zeale, who going to cut downe an ancient white Hawthorne-tree, which because it budded before others might

be an occasion of superstition, had some of the prickles flew into his eye, and made him monocular." In the time of Charles I. the remaining trunk of the tree was cut down, but a vintner of the place, "out of pure devotion," as the narrator tells, secured a slip, which being set in a garden, flowered on the 25th of December. There are still two old trees in the precincts of the abbey, which doubtless sprang from the venerable tree, and which even yet blossom in winter, though sometimes not until the latter end of January or February.

It is impossible to account for the winter flowering of the Hawthorn, though it was undoubtedly owing to a natural cause. Ashmole, in 1672, mentions having seen the branch of a Hawthorn, "having greene leaves, faire buds, and full flowers, all thick and very beautifull, and (which is more notable) many of the hawes and berries upon it red and plump; some of which," he says, "is yet preserved in the plante booke of my collection." This branch he had from Edgeworth, near Middlesex. Culpepper also mentions a Hawthorn which grew at Romney Marsh, and another near Nantwich, in Cheshire, where it flowered both at May and Christmas; though he says that if the weather was frosty it did not flower for the second time until January, or till the hard weather was over.

In 1752, when our fathers introduced what is commonly called the "New Style," our Glastonbury Thorn figured as a very important tree. This change, which has made many of the old proverbs respecting the seasons seem less wise than they really are, gave great offence to the uneducated class of the community. It not only seemed to them an attempt to alter the course of nature, but it caused even the very Psalms in the Prayer-Books to occur on what they deemed the wrong days; and all public evils, as unfruitful seasons, wars, and epidemics, were attributed to the fancied impiety of the rulers of the land. The Rev. W. T. Bree relates the complaints of an old labourer in an obscure village in Yorkshire, who assured him that the inhabitants of that parish were so disgusted with the change, that they were at the pains of procuring a minister at their own private expense to perform Divine service upon Old Christmas Day, making it also a point to work as usual on that newly appointed. Moreover, these simple villagers actually sent a deputation down to Glastonbury for the purpose of consulting the holy Thorn on the occasion, a sprig of which, gathered on Old Christmas Day in leaf, or in flower, the narrator forgets which, was brought back in triumph to the village.

Many other persons at the same time consulted the old Thorn, which would not swerve from its loyalty to the old anniversary, but was covered on Old Christmas Day with its blooms. A large concourse of people assembled at Glastonbury to see if it would flower on the day appointed by Parliament, but not a blossom appeared, and the general dissatisfaction was greatly increased by the circumstance.

The well-known haws which redden on the Hawthorn boughs in autumn and winter among the falling leaves, are a useful store to the birds till the frost deprives them of their flavour. Dr. Withering mentions that a variety of the tree with white leaves was found near Bampton, in Oxfordshire. It is generally supposed that our name of Hawthorn was derived from that

of the fruit; but many etymologists think that the haw took its name from the tree, and that the English word is a corruption of the German or Dutch name of Hedgethorn; the Germans terming our plant *Hagedorn*, and the Dutch *Haagdorn*. Our name of Whitethorn has its synonym in several countries: thus the Italians term it *Bianco spino*, and the Spaniards *Espino blanco*. And the name by which it is called in France has a very elegant allusion. The French term it *Aubépine*, signifying the morning of the year, the word *aube* expressing the white or grey twilight before sunrise. Though our haws are of little worth to any but the schoolboy, the fruits of some species are good, and the *Azarole* of South Europe is the very pleasant and juicy fruit of a Hawthorn. The old herbalists recommended that the common haws should be bruised and boiled in wine, and taken as a remedy for "tormenting pains"; while they held also that sponges dipped in the distilled water of the haws, and applied to "any place where Thorns or splinters doe abide in the flesh, it will notably draw them out." The application probably would be useful, as it would have the effect of a poultice. The bark of the Hawthorn affords a good yellow dye, and when mixed with copperas gives a black colour.

The following verses were written for this volume by H. G. Adams:—

TO THE HAWTHORN-TREE.

"Oh fair and fragrant Hawthorn-tree!
Thou hast thy nectar for the bee;
For every insect roving free,
Thou hast thy dewy wine!
Thou hast thy perfume for the breeze,
And, human hearts to cheer and please,
What pleasant reminiscences
And memories are thine!

"How many tones of childish mirth,
How many hearts that knew no dearth,
Have hail'd thy blossoms' annual birth
A wonder, ever new!
How many tiny feet have trod
With eager haste the daisied sod
To pluck thy gem-environ'd rod,
Or but thy bloom to view!

"Oh fair and fragrant Hawthorn-tree!
That deck'st the landscape gloriously,
It is a joy to gaze on thee,
And thy perfume inhale;
It is a pure delight to hear
The throstle greet thee, year by year,
And mark thy snowy wreaths appear,
Pride of the English vale!

"How many wanderers far away
From old familiar paths that stray,
Long once again to gather 'May'
From off thy laden bough;
Long for the meadows fresh and green,
And the clear streams, meandering seen
Beyond the hedgerow's leafy screen—
Seen but in visions now!

"Oh fair and fragrant Hawthorn-tree!
A gracious boon vouchsafed to be
To pilgrims treading wearily
The rugged ways of life;
We bless thy Maker—thine and ours!
Who covers all thy thorns with flowers,
To mind us of the heavenly bowers
Where cometh care nor strife.

"How many sinking hearts that fain
Aside the burden would have lain
Have ceased to murmur and complain
When gazing on thy bloom!
Which spake to them of sunny days,
Of God's benign though hidden ways,
And of the glorious light that plays
Above the riven tomb."

18. COTONEÁSTER.

Common Cotoneaster (*C. vulgáris*).—Leaves oval, rounded at the base; flower-stalks and margins of the calyx downy. Plant perennial. This plant is not known to occur in a truly wild state in more than one place in this kingdom. This is at Great Orme's Head, in Caernarvonshire, where it grows on limestone cliffs. In May and June the small solitary rose-coloured drooping flowers peep from among the dark green leaves, and are succeeded

in autumn by red, coral-like berries. The Cotoneaster does not form a tree, as is the case with kindred species, but is merely a small shrub with downy branches. Mr. Christy, in his notice of the plants observed during a tour in North Wales, thus remarks on this plant. Referring to heavy and continued rain which just then prevailed at the village of Llandudno, he says, "I was, however, too anxious to gather *Cotoneaster vulgaris* to be detained by the weather; and accordingly set off, accompanied by a guide who could speak no English, but who, the landlady assured me, knew both the plant and its places of growth. Following a steep narrow road up the hill, above the village, we reached some copper-mines, overhung by a range of limestone precipices. On these rocks the Cotoneaster grows abundantly, but owing to being continually browsed on by the sheep it is very dwarfish, and probably from the same cause appears seldom to flower. Sir J. E. Smith mentions July for the Cotoneaster; whereas the few fertile specimens I found at that season bore fruit considerably advanced. Mr. Wilson mentions May, which certainly agrees better with the state in which I found the plant." This writer remarks that the rocks were everywhere covered with the common rock rose (*Helianthemum vulgare*) intermixed with a profusion of the rarer hoary dwarf rock rose (*Helianthemum canum*).

END OF VOL. I.

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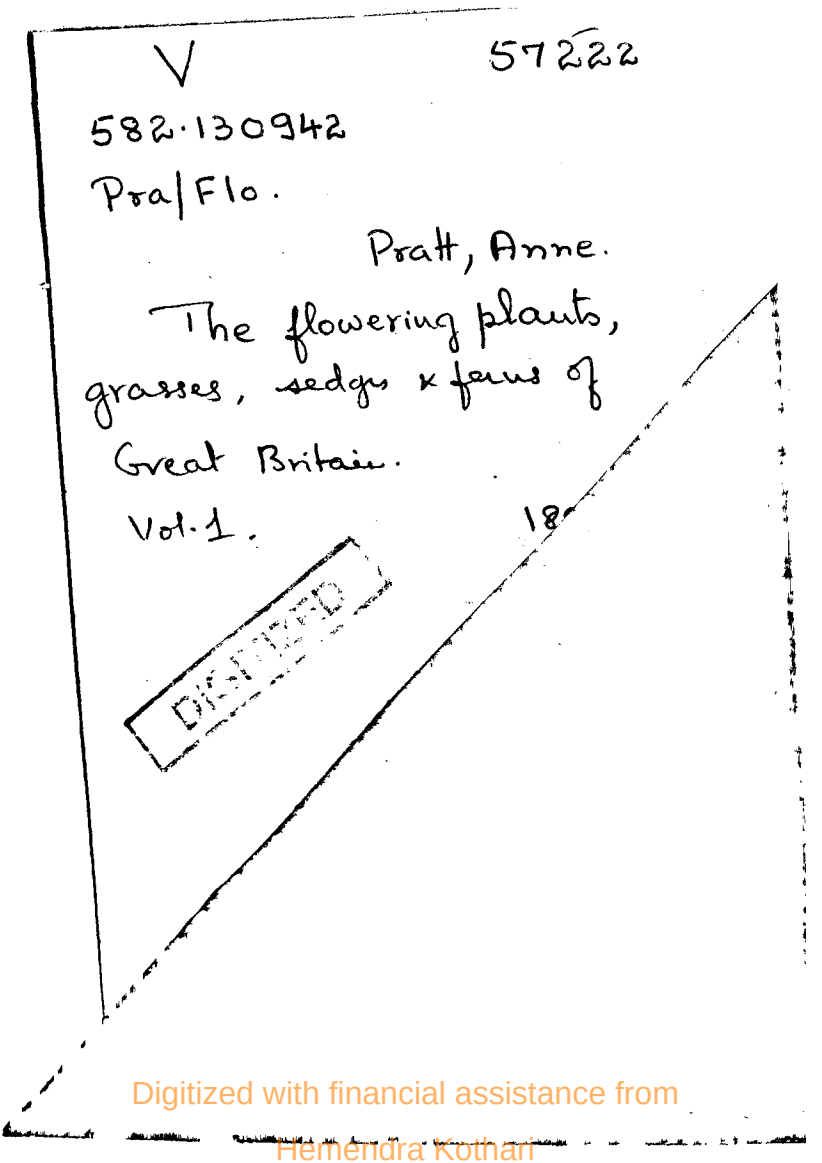

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